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Mechanisms for addressing and managing the influence of corporations on public health policy, research and practice: a scoping review

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Full title

- Mechanisms for addressing and managing the influence of corporations on public health policy,
- research and practice: a scoping review

Authors

- Melissa Mialon^{1,2*} (0000-0002-9883-6441), Stefanie Vandevijvere³, Angela Carriedo⁴, Lisa Bero⁵,
- Fabio Gomes⁶, Mark Petticrew⁷, Martin McKee⁷, David Stuckler⁸, Gary Sacks⁹

Affiliations

- ¹ Center for Epidemiological Studies in Health and Nutrition (NUPENS), Department of Nutrition,
- Faculty of Public Health, University of São Paulo, São Paulo, Brazil
- ² School of Nutrition and Dietetics, University of Antioquia, Medellin, Colombia
- ³ Sciensano (Scientific Institute of Public Health), Brussels, Belgium
- ⁴ World Public Health Nutrition Association (WPHNA), London, U.K.
- ⁵ Charles Perkins Centre and School of Pharmacy, Faculty of Medicine and Health, The University
- of Sydney, Camperdown, NSW, Australia
- ⁶ Pan-American Health Organization (PAHO)/ World Health Organization (WHO), Washington
- D.C., U.S.A
- ⁷ Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine, London,
- U.K.

- ⁸ Dondena Research Centre and Department of Policy Analysis and Public Management, University
- of Bocconi, Milan, Italy
- ⁹ Global Obesity Centre, Deakin University, Melbourne, Australia
- * Correspondence to: melissa mialon@hotmail.fr

Abstract

- 24 Objective: We identified mechanisms for addressing and/or managing the influence of corporations
- on public health policy, research and practice, as well as examples of where these mechanisms have
- been implemented from across the globe.
- 27 Design: We conducted a scoping review. We conducted searches in five databases on 4 June 2019:
- Web of Science Core Collection; BIOSIS; MEDLINE; Embase; Scopus. Twenty eight relevant
- 29 institutions and networks were contacted to identify additional mechanisms and examples. In
- 30 addition, we identified mechanisms and examples from our collective experience working on the
- influence of corporations on public health policy, research and practice.
- 32 Setting: national and global levels.
- Participants: We categorised the mechanisms in two groups: those for international organisations
- and governments; those for academia, the media and civil society.
- 35 Results: Thirty one documents were included in our scoping review. Eight were peer-reviewed
- 36 scientific articles. Nine discussed mechanisms to address and/or manage the influence of different
- 37 types of industries; while other documents targeted specific industries. We identified 49
- mechanisms that could help address and/or manage the influence of corporations on public health
- research and practice. For 41 of these mechanisms, we found examples, from across the world,
- where they have been implemented. The main purpose of the identified mechanisms was to manage
- 41 conflicts of interest and ethical challenges, while increasing the transparency of public-private
- 42 interactions. Mechanisms for governments (n=17) and academia (n=13) were most frequently
- 43 identified, with fewer for the media and civil society.
- 44 Registration: The protocol was registered with the Open Science Framework on 27 May 2019
- 45 (https://osf.io/xc2vp).

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Strengths and limitations of this study

- This review is the first attempt to develop an inventory of mechanisms to address and manage the influence of corporations on public health policy, research and practice.
- Many of the mechanisms identified in our review have been developed with no restriction in the type of industries targeted.
- The list compiled here is non-exhaustive and by nature, subject to changes, as an increasing number of governments and other institutions take measures to prevent undue influence from industry.
- We did not assess the quality of the included studies.
- Mechanisms at the sub-national level have not been included here.

Background

There is growing evidence, coupled with public awareness, that the economic power of corporations, particularly that of large transnationals, has led to the defeat, delay, and weakening of public health policies around the world.(1–3) Perhaps the best evidence of the harmful influence of corporations on public health policy is in the field of tobacco control. In the 1990s, during the course of litigation in the USA, leading tobacco companies released large quantities of internal documents (4,5), revealing how, over decades, they sought to deny the threat that tobacco posed to health and to thwart measures to reduce smoking.(6–8) Recent research has shown that tobacco industry influence has resulted in a policy shift towards industry interests in some regions, such as the European Union.(9) Tobacco continues to kill millions.(10) An emerging body of evidence is revealing the use of similar corporate efforts to defeat, delay and weaken public health policies and influence research and practice, from a range of sectors including the alcohol, food, gambling, oil and pharmaceutical industries, among others.(1,11–15)

Industry efforts to influence public policy, research and practice are often referred to as 'corporate political activity' (CPA). The CPA includes: coalition management (influence on third parties such as health organisations, communities and the media); information management (manipulation of the

evidence base, through the funding of research, ghost-writing, etc.); direct and indirect involvement in policy making; litigation or the threat of legal actions; and discursive strategies seeking to frame the dominant narrative in their favour.(8)

Several institutions have been established to monitor the influence of corporations on public health policy, research and practice, such as Corporate Europe Observatory in Europe and US Right to Know in the USA (see Supplementary File 1 for a non-exhaustive list of such organisations). Major reviews of the determinants of health also increasingly and explicitly examine the influence of corporations on public health policy, research and practice.(3) Approaches have recently been developed to analyse this influence systematically. The 'Corporate Permeation Index' developed by Lima and Galea measures "the extent to which corporations are embedded in the political, legal, social, economic and cultural fabric of a country".(16) The World Health Organization, as well as institutions in academia and civil society, have made recommendations to identify and monitor the influence of the tobacco industry on public health policy, research, and practice.(17–19) Mialon et al. built on this work and developed a step-by-step approach to monitor the CPA of the food industry within countries, using publicly available information.(11) To date, the approach has been implemented in more than 20 countries.(20-26) One commonly identified drawback of such approaches is that they are limited by a lack of relevant and comprehensive publicly available information for most industries other than tobacco, where millions of internal documents are now freely available to the public.(20,22,23,26) Evidence of this influence for other industries is typically sparse and not systematically compiled. It is obtained from a range of sources, including internal documents, primarily leaked by whistle-blowers, publicly available information (e.g., from media releases, companies websites, data on lobbying, etc.) and interviews with those who interact with these companies.

National health authorities and civil society organisations have increasingly been concerned with the weakening, delay and obstruction of public health policies due to harmful corporate practices (2,27,28). There is also increasing awareness and acceptance among the public health community,

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particularly in high income countries, that interactions with these industries require extreme caution, and, at the minimum, transparency coupled with a detailed understanding of their mode of operation.(29,30) The public health community looks for inspiration to the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) (31), with recent calls for a Framework Convention on Food Systems (FCFS) (3) and a Framework Convention on Alcohol Control (FCAC).(32) Article 5.3 of the FCTC bars any interactions between governments and the tobacco industry except for implementing tobacco control, led by public health officials.(31) As of December 2018, 181 countries had ratified the WHO FCTC, covering 90% of the world population.(33) The extent of implementation of key FCTC regulatory measures in countries is significantly associated with lower smoking prevalence. (34) However, the tobacco industry, often through pseudo-scientific front groups, still wields influence that allows it to avoid or water down regulatory initiatives.(35)

The demand for mechanisms to protect the policy process from undue corporate influence is growing. One example of how this became evident is when, in 2012, Member States requested the World Health Assembly (Resolution WHA65.6) to develop risk assessment, disclosure and management tools to safeguard against conflicts of interest (COI) in policy development and implementation of nutrition programmes. (36) The WHO also recently declared that it will no longer partner with alcohol industry actors during the development of policies to reduce harmful drinking.(37) The need for guidance on how to address and manage undue influence from corporations is also evident in research and practice (38,39).

Identification and monitoring of the industry influence on public health policy, research and practice is a necessary but insufficient step in protecting and promoting public health. It is important that international organisations, governments, academia, the media and civil society are equipped to tackle potential threats to global health. Our study objective was therefore to identify mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice, as well as examples of where these mechanisms have been implemented.

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Methods

We conducted a scoping review, where we searched peer-reviewed publications (scientific articles, letters to the editor, commentaries, etc.) and reports from governments, international organisations and civil society. We excluded books, as well as presentations from conferences, and other events where no full articles were available.

A scoping review was deemed to be the most relevant method for this study as we intended to summarise evidence from a heterogeneous body of research.(40) A scoping review advances knowledge in an emerging field of research.(40) In addition, it helps examine the nature of available research and research gaps in the literature, which could inform future research.(40)

We used the PRISMA Extension for Scoping Reviews (PRISMA-ScR, see Supplementary File 2) to prepare our scoping review protocol and our manuscript. The protocol was revised by the research team and registered with the Open Science Framework on 27 May 2019 (https://osf.io/xc2vp).

In our scoping review, the term 'mechanism' refers to: policies, regulations, guidelines, codes of conduct, frameworks, standards, initiatives or other tools to address and/or manage the influence of corporations on public health policy, research and practice.

The terms 'industry' and 'corporations' are employed interchangeably in this manuscript to refer to the manufacturers, wholesalers, retailers, distributors, food service providers, as well as producers of raw material. We also include those organisations acting on their behalf, overtly or covertly, including some trade associations, public relations firms, 'philanthropic' organisations, research institutions, and other individuals and groups.

Database searches

Search strategy

The development of the search strategy was informed by previous systematic and scoping reviews that analysed the influence of corporations on public health policy, research and practice (7,12,13) or that presented mechanisms to address and/or manage that influence (for the food industry for

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Colombia.

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example (39)).	We used	key word	ls and	Medical	Subject	Headings	(MeSH)	terms.	The	search
strategy was de	veloped wi	ith the hel	of Jar	amillo Fe	erney, a l	ibrarian at	the Univ	ersity o	f Anti	oquia,

The terms used in the search strategy were tailored to the requirements of each database and

included ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or

'guid*' or 'codes of conduct' or framework* or standard* or governance)). In addition, we searched

the following key terms in the titles only, as a broader search yielded too many irrelevant results:

((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok*

or cigarette* or oil or 'public health') AND (interact* or conflict* or 'public*private' or poli* or

legislat* or lobb*)).

Our search strategy for Web of Science Core Collection (Web of Knowledge interface) was:

TO= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance)) AND TI= ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or

legislat* or lobb*))

- Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-
- EXPANDED, IC Timespan=2003-2019
- We conducted systematic searches in five databases:
 - Web of Science Core Collection (Web of Knowledge interface);
 - BIOSIS (Web of Knowledge interface);
 - MEDLINE (Web of Knowledge interface);
 - Embase (Embase interface);
 - Scopus (Scopus interface).

The search strategies for other databases are presented in Supplementary File 3. Databases were searched on 4 June 2019.

Eligibility criteria

To be included in this review, publications had to:

- Be published after the year 2003, when the WHO-FCTC came into effect;
- Be published in English, French, Spanish, Portuguese or Italian;
- Analyse, use, compare, propose or evaluate one or several mechanisms for addressing and/or managing the influence of corporations on public health policy, research and/or practice;
- Focus on the influence of the alcohol, food, gambling, oil, pharmaceutical and/or tobacco industries on public health policy, research and practice;
- Focus on mechanisms at the international, regional (e.g., Europe) or national level.

Selection of sources of evidence

All citations identified were downloaded and imported to the web-based bibliographic manager F1000 Workspace, where duplicate citations were removed. Data extraction and analysis was led by the first author. MM screened all titles and abstracts, when available, for eligibility. 10% of the material was double screened by GS. MM then obtained the full-texts of potential eligible material. When publications were not available online, MM contacted the first authors of the materials to obtain a copy of the documents. MM assessed the eligibility of that material against the eligibility criteria. GS assessed the eligibility of 10% of the documents. Disagreement was resolved after discussion between MM and GS. For documents that were included in our review, MM searched their bibliographic reference sections (backward searches) and searched documents that were citing them; using Scopus (forward searches).

Additional searches

Twenty eight institutions and networks working on the industry influence on public health policy, research and practice, as detailed in Supplementary File 1, were contacted in May 2019 to identify additional mechanisms and examples. These institutions were identified through the authors' networks. Only one of these institutions answered our requests. In addition, we identified mechanisms and examples of their implementation from our collective experience working on the influence of corporations on public health policy, research and practice.

We included documents from the grey literature, including from international agencies (e.g., WHO, World Bank, etc.), national government agencies, universities, academic journals, international professionals associations, the media, research funders and civil society organisations.

Data charting process and data items

Data was charted by MM in an Excel table and the variables for which data were sought were:

- Whether or not the study was funded by corporations or had authors that were employed
 by corporations in the alcohol, food, gambling, oil, pharmaceutical or tobacco industries
 (as disclosed in the documents identified through our searches);
- Individuals and institutions targeted by the mechanism: governments and international
 organisations (with details about specific institutions targeted by the mechanisms within
 these organisations); academia (including researchers, universities, scientific journals,
 research funders, ethics review boards, etc.), the media and civil society;
- Details about the mechanism for addressing and/or managing the influence of corporations on public health policy, research and practice;
- Information about specific examples where the mechanism has been implemented, either fully or to some extent, including name of the country, name of the policy, URL.

Synthesis of results

We present the results of our searches in two tables summarising the mechanisms that we identified: one table with mechanisms for governments and international organisations and one table with mechanisms for academia, the media and civil society. We grouped these mechanisms by institution

(ministries, universities, academic journals, etc.), in no specific order. Where multiple mechanisms were identified targeting particular aspects of corporate influence, we only included the most stringent mechanisms, as determined by the authors. We also include examples where these mechanisms have been implemented, fully or to some extent, as identified in the documents collected during our systematic searches or as identified through additional searches. The URLs for the examples included in our scoping review are available in Supplementary File 4. We made a particular effort to represent a broad range of countries from different regions of the globe in these examples, although our list is non-exhaustive.

Exclusion criteria

We excluded documents funded by corporations or whose authors were employed by corporations in the alcohol, food, gambling, oil, pharmaceutical and tobacco industries (as disclosed in the documents identified through our searches), as these represented an inherent COI in the development of mechanisms to address and/or manage the influence of these industries.

In our analysis, we excluded mechanisms:

- that were proposed or developed by the industries mentioned above when these
 were presented among other mechanisms in non-industry funded documents (e.g.;
 reports from multi-stakeholders platforms);
- only addressing marketing practices, for example:
 - the sponsorship of sport;
 - interactions between pharmaceutical companies and doctors, pharmacists and other healthcare professionals (including during their training) when those have the sole purpose of selling products.
- targeted at corporations for managing their interactions with government, academia, the media and civil society;

58 59 271 • targeting corporate practices that are almost universally illegal, such as criminal activity and bribery of government officials, although we recognise that these other forms of influence exist. These are beyond the scope of this manuscript.

We also excluded documents that did not analyse, use, compare, propose or evaluate a mechanism per se, but rather discussed its implementation in a specific context (for example the implementation in 9 countries of a transparency policy for the interactions between healthcare professionals and the pharmaceutical industry (41)). In this case, we used these examples in our results section to illustrate instances where a mechanism was implemented.

Patient and Public Involvement statement

Patients and public were not involved in this research.

Results

The PRISMA flow diagram for our scoping review is presented in Figure 1. In total, 2,015 documents were identified in the databases searches (excluding duplicates). 1,998 documents were excluded and 17 included after screening of their titles and abstracts. In addition, 6 documents were identified through backward searches and 12 documents were found through additional searches. No new documents were identified through forward searches. In total, 35 full-texts were included for analysis. Subsequently, 2 articles were excluded because they did not present mechanisms for addressing and/or managing the industry influence; 1 article was excluded because we could not retrieve its full-text, despite contacting its first author; 1 article was excluded because it only discussed marketing practices.

< Insert figure 1: PRISMA flow diagram>

In total, 31 documents were included in our scoping review. All references included in our scoping review came from high income countries, in particular the USA (n=9). Eight documents were published by international organisations based in France, Switzerland and the USA. Only eight documents were peer-reviewed articles. Other documents included letters to the editors,

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commentaries and other pieces in scientific//clinical journals, as well as reports by national and international organisations. Nine documents discussed mechanisms to address and/or manage the influence of all sorts of industries. The other documents targeted specific industries (these categories are not mutually exclusive): 6 for the alcohol industry; 7 for the food industry; 5 for the gambling industry; 5 for the pharmaceutical industry; 6 for the tobacco industry. None of the documents discussed mechanisms to address and/or manage the influence of the oil industry. Most documents included mechanisms for governments (n=17) and academia (including researchers, universities, scientific journals, research funders, ethics review boards, etc.) (n=13). Three documents proposed mechanisms for civil society and one for the media. We found many examples where these mechanisms have been implemented, as described below.

Governments and international organisations

International organisations and governments have the mandate to protect and promote public health. Governments are in charge of the initiation, development, implementation and evaluation of public health policies. As such, they are a primary target of corporations whose profits might be threatened by such policies, during all phases of the policy cycle but in particular during initiation and development of policies.

In our scoping review, we identified 23 mechanisms to address and/or manage the influence of corporations on public health policy (Table 1).

There are growing concerns about how international organisations, including the WHO, engage with corporations and in response, the WHO has recently addressed some of these concerns, most notably in its Framework for Engagement with non-State Actors (FENSA) (36,42). There is criticism of FENSA, as it could be interpreted as an invitation for increased collaboration between the WHO and industry, suggesting that this is acceptable if managed as per WHO guidelines.(43)

The Organisation for Economic Co-operation and Development (OECD) published several documents that are relevant for the current scoping review, including guidelines for the

management of conflicts of interest.(44,45) In 2017, it developed a framework for 'Preventing Policy Capture'.(46) It also published a series of reports on lobbying regulation (47) and on the funding of political parties and elections campaigns.(48)

The World Bank developed a 'Public Accountability Mechanisms Initiative', which includes specific recommendations and "provides assessments of countries' in-law and in-practice efforts to enhance the transparency of public administration and the accountability of public officials".(49)

Many countries and international organisations have internal policies and procedures to manage COI, some of which require the disclosure of these interests to the public. There are, in addition, existing tools that can help in assessing risks to individuals and institutions in public health when they are considering engaging with corporations, such as the Purpose, Extent, Relevant-harm, Identifiers, Link (PERIL) indicators (50) or the decision-making tool developed by the World Health Organization for the prevention and management of COI in nutrition programmes.(51)

Public health ethicists have noted that COI provisions might not be sufficient and that industry interactions might be ethically problematic and may influence public health policy, research and practice even when there is no breach of COI policies.(52,53) In addition to COI policies, we identified a broad range of other mechanisms that could help address broader ethical risks: officials' diaries disclosures, publication of all communications and/or interactions between the government and corporations, a freedom of information request process and the protection of whistle-blowers or the regulation of lobbying.

For 21 of the 23 mechanisms identified in our scoping review, we have evidence of their implementation, in different parts of the world, to various degrees. Many of the examples identified in Table 1 refer to the interactions of governments and international organisations with the tobacco industry, following the ratification of the WHO FCTC. However, no country, to date, has fully restricted the influence of corporations on public policy.

<Insert Table 1>

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Academia, the media and civil society

We identified, through our systematic searches, 26 mechanisms to address and manage the influence of corporations on academia, the media and civil society (Table 2).

Individuals and institutions in academia, the media and civil society (including public health professionals, civil society organisations, etc.) often engage with corporations, through the sponsorship of events, funding of research project, scientific awards or other types of interactions. These are common practices and while there are multiple reasons for them to happen, the scarcity of public funding and the large resources of corporations are often mentioned.(52) There is, however, growing concern that the influence of the industry poses threats to the independence, integrity and credibility of these individuals and institutions.(28,54–60)

We found examples, from across the world, where these 21 of these 26 mechanisms have been implemented. Some universities refuse funding from the tobacco industry; some make transparent the interactions between their staff members, students and corporations. Many institutions in academia and civil society have conflicts of interest policies, which is also the case for some scientific journals and professionals associations. The provision of education in universities, conferences and other meetings and to journalists was also cited.

<Insert Table 2>

Discussion

Our searches identified 49 mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice. The main purposes of the mechanisms identified are to manage conflicts of interest and increase the transparency of public-private interactions. For 41 of these mechanisms, we found evidence of their implementation, although they may not necessarily all be applied in practice.

There is currently limited research in this area, with only a few peer-reviewed scientific articles published in the literature. We also noted that there is a lack of research from low or middle income

countries. We identified limited evidence on mechanisms targeted at the media and civil society, compared to those targeted at governments and academia. We found no information for schools on ways to address and manage the influence of corporations on their institutions, in relation to public health (for example through the provision of health or nutrition education or physical activity programmes). We identified limited information about mechanisms that could address the influence of corporations; most mechanisms seek to manage that influence (through transparency and disclosure, for example). This is an important first step, but is not sufficient, or could even be counterproductive in some circumstances. (53)

To our knowledge, this review is the first attempt to develop an inventory of mechanisms to address and manage the influence of corporations on public health policy, research and practice. Among its strengths is its breadth. Although we limited our searches to mechanisms developed to address and/or manage the influence of the alcohol, food, gambling, oil, pharmaceutical and tobacco industries, many of the mechanisms identified in our review have been developed with no restriction in the type of industries targeted. Hence this inventory may help in building efforts to address and/or manage the influence of all types of industries.

The list compiled here is non-exhaustive and by nature, subject to changes, as an increasing number of governments and other institutions take measures to prevent undue influence from industry. It rather was intended to be a first attempt to identify mechanisms that exist across the globe, as well as examples where these mechanisms have been implemented. It thus provides a firm footing for further work in this area.

In this scoping review, we did not assess the quality of the included studies, as we only used them to identify mechanisms. In addition, mechanisms at the sub-national level have not been included here and might this be the subject of future investigations. Moreover, we excluded work funded by the industry, but it is possible that some authors did not declare their sources of funding in the publications. In this case, their work is included in our analysis, which represents a COI with regards to the issues at stake.

Ideally, corporations should refrain from influencing public health policy, research and practice. Governments, international organisations, academia, the media and civil society should avoid interacting with corporations whose interests risk damaging their independence, integrity and credibility.(52) However, in reality, these interactions often are the default approach in public health, probably driven by a strong influence exerted by businesses. (52) These interactions, the reasons for them to happen and associated risks for public health have recently been discussed in the literature. (52) Public institutions sometimes lack resources, particularly financial resources, to address urgent public health issues.(52) Academic institutions might want to contribute to the economic development in their country, thus partnering with corporations. (52) The current situation is perhaps challenging, but there is scope (and need) for change. Many of the examples we identified in our review related to the implementation of the WHO FTCT, the only global treaty that explicitly addresses the interference of an industry with public health policy. The proposed Framework Convention on Food Systems (FCFS) and Framework Convention on Alcohol Control (FCAC) are therefore potential solutions to address and manage the influence that vested interests could have on public health policy, research and practice. If adopted more widely, many of the mechanisms described in this manuscript could contribute to efforts to prevent and control non communicable diseases.

More research on each of these mechanisms is needed, including on their effectiveness in addressing and/or managing the influence of corporations on public health policy, research and practice. Collectively, public health professionals might also develop, in the future, new mechanisms not described in our manuscript. Some countries have already adopted some of the mechanisms proposed in this manuscript; others have done little, including countries facing strong resistance to developing and implementing them. An evaluation of the implementation of these mechanisms, which could include a benchmarking exercise, is therefore needed and will inform governments, universities, and other actors in public health. In addition to these mechanisms, a module on 'corporations and health' could be part of the curriculum for professionals being trained

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in public health policy, research or practice. Conferences and other meetings of public health professionals should also be used as a platform where to discuss influence of the industry on public health policy, research and practice. This may be particularly important in the case of academic conferences which involve extensive resources and input from and partnerships with corporations, such as nutrition and gambling conferences.

In conclusion, corporations have significant economic and political power, which may, in some circumstances, be detrimental to public health. We identified several mechanisms that could help address and/or manage that influence. The development, implementation and monitoring of these mechanisms seem crucial to protect public health from the commercial interests of industry actors.

Authors' contributions

MM and GS contributed to the conception of the work, with support from SV and LB. MM led data collection and analysis, with support from SV, AC, LB, FG, MP and GS. MM led the writing of the manuscript and all authors have substantively revised it. All authors have approved the submitted version. All authors have agreed both to be personally accountable for the author's own contributions and to ensure that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature.

Competing interests declaration

None.

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 - FG is a staff member of PAHO. FG is responsible for the views expressed in this publication, and they do not necessarily represent the decisions or policies of PAHO.

Ethics approval

This project did not require an ethics approval.

Data sharing statement

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

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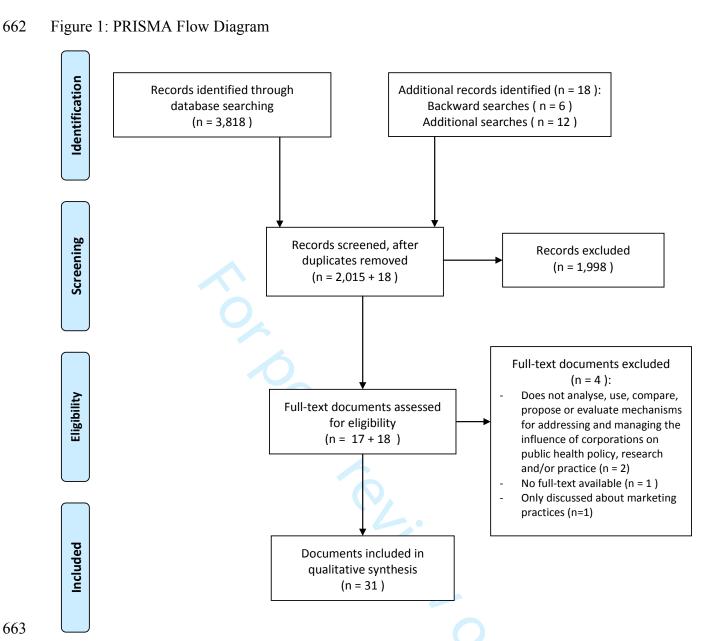


Table 1: Mechanisms for addressing and/or managing the influence of corporations on public health policy (non-exhaustive)

Individuals and institutions	Mechanisms identified through our scoping review	Examples where these mechanisms have been implemented (fully or to some extent)
	Public health plan or strategy that explicitly includes the protection of public health policies from industry interests, including the possibility to challenge demonstrable industry influence (61,62)	
Ministries and related agencies in charge of health, agriculture, education, environment, and trade/industry Parliament and Senate	 A set of policies related to conflicts of interest (44,45): information about who to accept funding from, based on a risks analysis a clear and realistic description of circumstances and relationships that can lead to a conflict-of-interest (46) information about how interactions with corporations (and third parties acting on behalf of the industry) and conflicts of interest, both at the individual and institutional levels, will be reported, reviewed, documented, monitored and managed (including restricted, if necessary (61–63)), as well sanctions in case of non-compliance with the policy (49) requirements for government officials to declare and divest themselves of direct interests in specific industries related to health (e.g.; tobacco industry) (61,62) restrictions on government institutions and their bodies from having financial interest in specific industries related to health (e.g.; tobacco industry), unless they are responsible for managing a government's ownership interest in a Stateowned company (61,62) restrictions on government institutions and their bodies from accepting contributions (financial or in-kind) from specific industries related to health (e.g.; tobacco industry) or from those working to further its interests, except for compensations due to legal settlements or mandated by law or legally binding and enforceable agreements (61,62) Officials that should be covered by the above mechanism include: Ministers; Senior public servants; Customs officers; Contract managers; Prosecutors; Tax officials; Judges; Procurement officials; Ministerial cabinet staff; Auditors (44) 	 Brazil - Presidency of the Republic - Code of Conduct for Senior Federal Administration Colombia - Congress of Colombia - Law 190 of 1995, article 15 - Regime of civil servants European Union (EU) - Guidelines on the prevention and management of COI in EU decentralised agencies France - Penal Code - Article 432-12 (individual conflicts of interest) Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Law of Administrative responsibilities of civil servants (individual conflicts of interest) Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling Interference in Policy Making and Implementation - Conduct of Public Agency Officials Philippines: Civil Service Commission - Department of Health - Joint Memorandum Circular no. 2010–01 on Protection of the Bureaucracy against Tobacco Industry Interference. Department of Health - Memorandum No. 2010–0126 on Protection of the Department of Health, including all of its Agencies, Regional Offices, Bureaus or Specialized/Attached Offices/Units, against Tobacco Industry Interference. Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry World Health Organization: Article 5.3 of the Framework Convention on Tobacco Control Framework for Engagement with non-State Actors (FENSA)
	Public financial disclosure (combination of income, assets, liabilities, business activities, and incompatibilities with public mandates) for individuals in government. This would include sanctions if these disclosure are not filled or contain omissions or misleading information (45)	 Colombia - Congress of Colombia - Law 190 of 1995, article 15 - Regime of civil servants EU - European Parliament - Declarations of interests - Members of the European Parliament France - High Authority for Transparency in Public Life Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Federal Law for administrative responsibilities of public servants, Article 8, XV

Policy on mandatory waiting periods after the termination of employment before individuals from a company that is regulated by a government agency can work in this government agency and vice-versa (45,61,62,64)	USA - State Legislative Prohibitions on "Revolving Doors", a 'practice of public officials or employees abandoning public service for lobbying positions'
Procedural guidelines for committees or advisory groups related to public health on: • size • constituency • membership • role • members duties and rights • public disclosure of the composition of the group • public disclosure of the minutes of the meetings • public disclosure of the declarations of conflicts of interest for all members • potential exclusion of individuals who have a conflict of interest (65) That might include a prohibition for any person employed by specific industries related to health (e.g.; tobacco industry) or any entity working to further their interests to be a member of any government body, committee or advisory group that sets or implements public health policy (61,62)	 Brazil: Brazilian Health Regulatory Agency (Anvisa) - Decree on conflict of interest related to working groups Tobacco Control Inter-Ministerial Commission EU - European Food Safety Authority - Declarations of interests - Panel on nutrition Mexico: Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Regulation of the Scientific Council for the Health Risks Regulatory Agency Ministry of Health - Ethics and Prevention of Conflicts of Interest Committee
Policy for the receipt of gifts and of donations to individuals in government (including prohibitions), as well as public disclosure of the list of such donations when these are permitted (45,61,62)	 Australia - Australian Public Service Commission - Sect 4.12 Gifts and benefits Brazil - Code of Conduct for Senior Federal Administration 2014 Canada - Office of the Conflict of Interest and Ethics Commissioner - Registry of gifts EU - European Parliament - Register of gifts - 8th parliamentary term
Ministers' and other government officials and employees' diary public disclosures, with an indication of dates, times, organisations and individuals met, as well as purpose and minutes of all meetings (46,61,62,65)	 Brazil: Anvisa - Agenda of senior officials Presidency of the Republic - Agenda of the President of the Republic: (agenda available for other government officials) Canada - Government of Canada - Meetings and correspondence on healthy eating EU - European Parliament - Committees - Draft agendas
Public disclosure of correspondence (including emails) and transcriptions of telephone conversations between corporations (and third parties acting on behalf of the industry) and individuals and institutions in government (61,62)	 Canada - Government of Canada - Meetings and correspondence on healthy eating Russian Federation - public disclosure is included in the Federal Law N 15-FZ of February 23, 2013 On Protecting the Health of Citizens from the Effects of Second Hand Tobacco Smoke and the Consequences of Tobacco Consumption
Public disclosure of the list and content of submissions (current and closed) to public consultations on public health issues, as well as a dedicated personnel to review the evidence in these submissions (65)	 Australia - Australian National Health and Medical Research Council (NHMRC) - Public submissions - Open public consultations EU - European Commission - Consultations - Public Health USA - US Food and Drug Administration - Code of Federal Regulations Title 21 - Food and Drugs
Mandatory tax for companies to be used by an independent organisation (government agency for example) to fund public health research and practice (66)	Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter Three - Financing of tobacco control activities: Article 10 - Health Promotion Foundation: 'The Foundation shall be comprised by the budget, equal to 2

	percent of tobacco excise tax.'
Public availability of companies' financial reports	 Canada - Alberta Securities Commission - System for Electronic Document Analysis and Retrieval (SEDAR) USA - U.S. Security and Commission Exchange: Edgar, company filings
Public disclosure of legal disputes and corresponding decisions in which corporations were and are involved	Brazil - Supreme Court portalChile - Supreme Court portal
Formal freedom of Information (FOI) request process with: • procedures for accessing information, including justifiable and reasonable search and retrieval fees for non-personal information • narrow and explicitly identified limitations to disclosure requirements • enforcement mechanism • deadlines for release of information • sanctions for non-compliance • Proactive disclosure for certain type of information (49)	 Australia - NHMRC - Freedom of Information Chile - Ministry General Secretariat of the Presidency - Law n°20285 on access to publi information Colombia - Presidency of the Republic of Colombia - Law 1712 of 1994 on transparence and right to access to national public information EU - European Commission - Public access to documents India - Right to Information Act, 2005 Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Federal Law of transparency and access to public information South Africa - South African Government - Promotion of Access to Information Act 2 of 2000
FOI disclosure log, containing information which has been released in response to an FOI access request	 Australia - NHMRC - Freedom of Information Disclosure Log Brazil - Transparency portal Chile - Transparency portal Ireland - Department of Health - Freedom of Information Request Log United Kingdom (UK) - House of Lords: FOI Request Logs - UK Parliament
Policy which aim to minimise industry involvement in health policy-making (61,62)	 Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 1: Article 4. State Polic on Tobacco Control Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling Interference in Policy Making and Implementation - Manufacturer and Related Parties Prohibited to Participate in Tobacco Product Control and Regulatory Task Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry
Policy to reject partnerships, including in research, with specific industries (e.g.; tobacco industry) (61,62,67)	 Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 2: Article 8. Ban on advertising, promotion and sponsorship of tobacco products Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controllin Interference in Policy Making and Implementation - Prohibition on Partnerships and Participations Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry

Policy that prohibits government to endorse, support, partner with or participate in industry sponsored activities, including 'corporate social responsibility' (e.g.; tobacco industry) (61,62)	Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling Interference in Policy Making and Implementation - Prohibition on Assuming Organizational Social Responsibility - 'The public agency officials are prohibited to participate in any tobacco industry sponsored programs to accept assistance or awards, as well as participate in national and international programs like meetings, trips, trainings seminars and conferences organized with invitation and assistance from tobacco industries.' 'It is prohibited to accept tobacco industry assistance or collaboration offered in the name of educational development, ethnic or social class upliftment or supporting emergency services; and manufacturers and related parties are prohibited to provide such assistance'
Regulation to restrict direct industry contributions to civil society organisations (68)	Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 2: Article 8. Ban on advertising, promotion and sponsorship of tobacco products - 'It shall be prohibited to provide financial, material aids and contributions to social, health, welfare and environmental organizations by the tobacco industry or through another organizations under the name of "Social responsibility"
Protection of whistle-blowers and investigative reporters (44,45), which could include: • guarantee of confidentiality • secure communication • legal assistance • civil and criminal sanctions against the perpetrators of retaliation against whistle-blowers	 Africa - Platform to Protect Whistleblowers in Africa Canada - Government of Canada - Justice Laws website - Criminal Code France - Maison des lanceurs d'alerte (House of whistle-blowers)
 Lobbying regulation (44,46,47,61,62) which: provides clear and unambiguous definition of lobbyist and lobbying activities targeted by regulation (47) set standards for expected behaviour, for example to avoid misuse of confidential information, conflict of interest and prevent revolving door practices includes procedures for securing compliance, in a coherent spectrum of strategies and mechanisms, including monitoring and enforcement includes a five-year ban on lobbying for former ministers, ministerial staffers and senior public servants includes mandatory penalties in case of the provision of false or misleading information in accordance with national law 	Chile - Ministry General Secretariat of the Presidency - Platform Lobby Law - Code of good practices for lobbyists
Public disclosure of lobbyists and information on objectives, beneficiaries, funding sources and targets (46,47,61,62,69)	 Australia - Australian Government Lobbyists Register Chile - Ministry General Secretariat of the Presidency - Platform Lobby Law - Registry of lobbyists France - High Authority for Transparency in Public Life - Registry of Lobbyists
	USA - Office of the clerk - House of Representatives - Lobbying Disclosure

	ensure a whole-of-government approach to minimising specific industries' opportunities (e.g.; tobacco industry) for policy influence by changing officials' behaviour towards their political activity: • governmental administrative circulars (circulars); • meetings, workshops, presentations, and consultations (meetings); • training based measures (training), in which awareness raising is embedded in the training of civil servants and legal adviser of government ministries; • intra-governmental advocacy by health ministries (or specific agencies) aimed at providing intelligence to other parts of government targeted by the industry in the context of specific policy conflicts (intra-governmental advocacy); • ongoing campaigns by national, regional, and local health officials aimed at highlighting the policy value of protecting health policy from industry interference (campaigning); • mass media campaigns which use local television advertisements, newspaper articles, radio call in shows, and websites to raise awareness of industry interference among the general public (public awareness raising).' (45,61,62,67)	
Political parties and commissions in charge of elections campaigns	Regulation of the funding of political parties and elections campaigns (46,48,61,62): Timely, reliable, accessible and intelligible public disclosure of donations prohibitions for certain type of private contributions such as foreign interests or corporations information about third parties acting on behalf of the industry limits on donations limits on anonymous donations sanctions for violators of the law	

independent and efficient oversight

- against the Tobacco Habit Chapter VIII: Education, communication and public awareness
- Nepal Tobacco Product Control and Regulatory Directive 2014 Chapter 4: Develop Public Awareness and Make Public Places Smoke and Tobacco Consumption Free
- Panama Ministry of Health Resolution No. 745 on the National Commission for the Study of Tobacco

- Brazil Superior Electoral Court:
 - Accountability of candidates and political parties
 - o Disclosure of Election Candidatures Accounts
- Chile Electoral Service Donations
 - France National Assembly Financing of political life: parties and electoral campaigns

Table 2: Mechanisms for addressing and/or managing the influence of corporations on public health research and practice (non-exhaustive)

Individuals and institutions	Mechanisms identified through our scoping review	Examples where these mechanisms have been implemented (fully or to some extent)
Academia ¹	 Policy on conflicts of interest and external engagement that includes (39,67,70–73): a clear and realistic description of circumstances and relationships that can lead to a conflict-of-interest information about who to accept funding from (including restrictions on funding from specific industries, such as the tobacco industry), based on a risks analysis information about how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided, if necessary), reported, reviewed, documented, managed, or eliminated, as well sanctions in case of non-compliance with the policy requirements for full disclosure of funding sources and financial interests in research publications and media releases requirements for continuous reporting from projects with industry funding if institutional policy permits active management of obvious conflicts of interests No money should be accepted if it explicitly constrains the capability of institutions to do their work without interference from the funder (70) Institutions should not accept money if doing so pushes them to be something that is not consistent with their mission (e.g.; to promote the health of the public) (70,73) 	Australia Deakin University - 'the University must not accept direct or indirect funding from or enter into any partnership or other arrangement with the tobacco industry, an organisation in the tobacco industry or from a foundation that accepts funds from the tobacco industry.' The University of Sydney - ban on acceptance of funding from tobacco companies The University of Sydney, Charles Perkins Centre - Engagement with industry guidelines USA - American Association of University Professors - Recommended Principles to Guide Academy-Industry Relationships USA - National Institutes of Health - Financial Conflict of Interest
	 Public disclosure and reporting to the institution's conflict of interest committee of: the declarations of conflicts of interests of individuals, throughout all stages of design, implementation and reporting (65,67,70,73–76) funding sources and other donations from corporations (and third parties acting on behalf of the industry) to individuals and institutions fellowships, awards and other prizes from corporations (and third parties acting on behalf of the industry) to individuals and institutions 	Australia
	Policy on academic freedom, autonomy and control (70)	 France - Education Code, L952-2 on academic freedom New Zealand - Education Act 1989 No 80, Public Act 161 Academic freedom
	Policy on academic publication rights (39,67,73)	USA - Standford University - Standford University industrial contracts office - Researcher's Guide to Working with Industry
	Provision of education to students on how to evaluate information provided by corporations	USA - Structured Pharmaceutical Representative Interactions and Counterdetailing sessions as Components of Medical Resident Education (77)

	Policy to ensure that (74): • research priorities and the distribution of funding is determined by researchers who have not received direct or indirect (through third institutions) funding from corporations • academic reviewers should not include those who have accepted funding in the past 3 years from industry who have a conflict of interest in the research to be conducted	 UK - National Health Service (NHS) England - Managing Conflicts of Interest: Statutory Guidance for Clinical Commission Groups and Conflicts of interest management templates, including registers of gifts and hospitality UK - Wellcome - Conflicts of interest policy USA - National Institutes of Health (NIH) - Financial Conflicts of Interest for Awardees - standard operating procedure
Research funding committees, panels or boards	Policy for government to conduct clinical trials and other research activities involving patients or to choose the researchers who would design and conduct the tests (78)	
	Public registry of all clinical trials and other research activities involving patients with information on the study design, methods, and full results (39,65,71,78–80).	USA - ClinicalTrials.gov - a public database operated by the National Institutes of Health (NIH) (most clinical trials in this case are conducted by pharmaceutical companies)
	Publication of all relevant data, outcomes and results of clinical trials and other research activities involving patients, including null results, adverse effects and stopping rules, administrated and monitored by an independent institution. (65,67,78–80)	
Ethics review boards	Policy to assess the appropriateness of funder–researcher relationships (71)	Germany - Institute for Therapy Research Munich - Policy on Competing Interests International - World Medical Association Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects - Ethics Committees - 'This committee must be transparent in its functioning, must be independent of the researcher, the sponsor and any other undue influence and must be duly qualified'
	Policy to reject manuscripts funded by or written by contributors from specific industries (and third parties acting on behalf of the industry) (81,82)	 International - Cochrane policy on commercial sponsorship of Cochrane Reviews and Cochrane Group International - Journal of Human Lactation does no publish research funded by companies that are not compliant with WHO Code on the Marketing of Breast-Milk Substitutes International - Tobacco control, BMJ, Heart, Thorax, BMJ Open, PLoS Medicine, PLoS One, PLoS Biology, Journal of Health Psychology, journals published by the American Thoracic Society - do not publish research funded by the tobacco industry
readefine journals	Policy to discourage individuals from engaging in industry-led 'ghost-writing' or ghost authorship (76)	 Neurology Journals - Authorship and Disclosures Annals of Internal Medicine - Exorcising Ghosts and Unwelcome Guests
	Policy for addressing, managing, through declarations and disclosure, conflicts of interests for editors (67,71,74)	 International - the BMJ - Staff declarations International - Public Health Nutrition - Editors conflict of interest statements International Society of Addiction Journal Editors - declarations of conflicts of interest for contributors and editors
	Policy including: • a mandatory declaration and disclosure of conflicts of interests for contributors (which would include details about conflicts with third parties	International Committee of Medical Journal Editors (ICMJE) - Conflict of Interest form

	 acting on behalf of the industry) (67,71,72,74,76,81,82) a positive statement that all contributors in a publication had complete control over the research process (71,76) a statement, in the methods section, about the role of the funding source in the design, conduct, analysis and reporting of the data (72,76) additional steps that will be undertaken by the journal to obtain the most meaningful disclosures from authors, such as quick search of the tobacco industry documents for the names of authors of papers on tobacco or the invitation of a peer reviewer with tobacco industry document research experience (72) 	
	Policy that require that all trials to be registered at time of initiation of the study (82)	USA - American Journal of Clinical Nutrition - information for authors: format and style requirements
	Policy to ensure that advertising revenue is independent from corporations that have a conflict of interest with the journal's main mission (78)	International - BMJ - The BMJ and sister journals no longer carry advertisements for breastmilk substitutes
Professional associations and civil society ²	 Policy or code of conduct (71) including information about: who to accept funding from, including bans on the acceptance of funding from specific industries (e.g.; tobacco industry) (including third parties acting on behalf of the industry) based on a risks analysis (68,81) how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided if necessary), reported, reviewed, documented, managed, or eliminated, as well sanctions in case of noncompliance with the policy (83) Individuals should not solicit or accept gifts from specific industries (e.g.; tobacco industry) (and third parties acting on behalf of the industry) that might influence or appear to influence objectivity, independence, or fairness in clinical and professional judgment (83) No money should be accepted if it explicitly constrains the capability of the institutions to do their work without interference from the funder (70) Institutions should not accept money if doing so pushes them to be something that is not consistent with their mission to promote the health of the public (70,79,84) 	 Canada - In 2017, the Canadian Medical Association's policy on physicians' interactions with industry was formally adopted by 22 out of 60 Canadian medical associations International Network on Brief Interventions for Alcohol & Other Drugs (INEBRIA) - Position Statement on the alcohol industry International Society of Behavioral Nutrition and Physical Activity (ISBNPA) - Partnership, sponsorship and donation policy UK - Royal College of Paediatrics and Child Health (RCPCH) - RCPCH statement on relationship with formula milk companies World Obesity Financial Relationship Policy World Public Health and Nutrition Association (WPHNA) - Conflict of interest and ethics policy
	Governance workshops: governance boards are assisted in their deliberations on industry involvements by presentations or workshops to raise their awareness of the issues and help them reach an informed position on the extent of industry involvement (68)	
	Public disclosure of (68): • funding (or other donations) received from corporations (and third parties acting on behalf of the industry) to individuals and institutions • list of fellowships, awards and other prizes funded by/received from corporations (and third parties acting on behalf of the industry)	USA - American Academy of Nutrition and Dietetics - Meet our sponsors

	agreements made with corporations (and third parties acting on behalf of		
	the industry)		
	The above strategies could be mandated by law, with substantial fines for those who fail to comply.		
	Monitoring of influence of commercial interests on public health: annual reports and international comparisons (61,79)	See Supplementary File 1 for a list of institutions working on the influence of corporations on public health policy, research and practice, some of which are implementing this mechanism	
Conferences and other meetings in public health	 Policy including information about (74,85,86): Individuals and institution responsible for the content, quality, and scientific integrity of activities. This necessitates eliminating commercial bias for or against any product and maintaining control over planning, program design, faculty selection, educational methods, materials, and evaluations who to accept funding from and how to document agreements made with corporations, based on a risks analysis how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided, if necessary), reported, reviewed, documented, managed, or eliminated, as well sanctions in case of noncompliance with the policy ways to avoid focus on a single product or company (including through branded items, exhibit halls and booths, use of brand or trade names) control of the access to registrants' mailing addresses review of educational materials and whether or not to ban the distribution of promotional materials in educational sessions which party is responsible for general oversight to ensure compliance with policy, as well as sanctions for non-compliance 	 International Society of Behavioral Nutrition and Physical Activity (ISBNPA) - policy for sponsors of annual meetings World Public Health and Nutrition Association (WPHNA) - World Nutrition Congress 2016 - Conflict of interest and ethics policy 	
	 Public disclosure of (74,86): declarations of conflicts of interest for conference organisers and all participants list of sponsors, nature of sponsorship, as well as agreements made with sponsors list of presentations made by individuals from, or supported by, corporations (and third parties acting on behalf of the industry) list of awards and other prizes from corporations(and third parties acting on behalf of the industry) list of booths 	 Latin America - Sociedad Latinoamericana de Nutrición (SLAN) - Conflict of Interest policy USA - Obesity Week 2018 abstracts (including sources of funding) 	
	Provision of education to participants on how to evaluate information provided by corporations		
	Education and certification programs to be developed for journalists who report upon health, which would emphasise the risks of conflicts of interest (87)		

	Codes of ethics (87): • requiring that journalists disclose financial or in-kind support relevant to each article or commentary piece • specifying the relationships that are not acceptable (e.g., journalists reporting on products or services produced by companies in which they hold shares, or companies paying for the travel expenses of journalists' families) • opposing industry-sponsored prizes and educational endowments Where countries regulate journalism, the above strategies could be mandated by law, with substantial fines for those who fail to comply	International - Association of Health Care Journalists - Statement of Principles of the Association of Health Care Journalists
	Publicly accessible register of relationships between industry (and third parties acting on behalf of the industry) and journalists, editors, media organisations and journalism organisations (including professional and educational bodies) (87) Where countries regulate journalism, the above strategies could be mandated by law, with substantial fines for those who fail to comply	
Other	Public database of conflicts of interests for individuals and institutions in public health (39,67,82)	 The Centre for Science in the Public Interest (CSPI) used to have a database of more than 4,000 scientist and universities that had ties with the industry (the list is no longer available) (88) Several countries have adopted transparency policies with regard to the interactions between healthcare professionals and pharmaceutical companies (41): France - Public database Transparency - Health - Law No. 2011-2012 of 29 December 2011 on the Strengthening of Health Protection for Medicinal and Health Products USA - Centers for Medicare and Medicaid Services - Open Payments, established through the Physician Payments Sunshine Act (PPSA), also known as section 6002 of the Affordable Care Act (ACA) of 2010

¹ These mechanisms are directed at individuals in academia, including students, researchers and other academic professionals, and their institutions, including universities, research organisations, research agencies from governments and academic medical centres

² These mechanisms are directed at individuals, including health and public health professionals, and their institutions, including patient and consumer organisations, health/public health professionals organisations

- Additional file 1: List of institutions working on the influence of corporations on public health policy, research and practice (alphabetical order, as of Jan 2019, non-
- 2 exhaustive)

Name of the organisation	Region	Nature of organisation	Mission related to the influence of corporations on public health policy, research and practice
Alcohol Justice	USA	Civil society organisation	Campaigning against the alcohol industry's harmful practices
Alliance for Lobbying Transparency and Ethics Regulation (Alter-EU)	Europe	Civil society organisation	Advocating against the influence of corporate lobbyists on the political agenda in Europe
Anticor – against corruption and for ethics in politics	France	Civil society organisation	Fighting corruption and advocating for ethics in politics
ATTAC (Association for the Taxation of Financial Transactions and for Citizens' Action)	International	Civil society organisation	Advocating for the taxation of financial transactions
Center for Media and Democracy (CMD)	USA	Civil society organisation	Investigating corruption
Centre for Research on Multinational Corporations (SOMO)	International	Civil society organisation	Investigating multinational corporations and the impact of their activities on people and the environment
Center for Responsive Politics	USA	Civil society organisation	Tracking money in USA politics and its effect on elections and public policy
Center for Science in the Public Interest (CSPI)	USA	Civil society organisation	To ensure that science and technology are used for the public good and to encourage scientists to engage in public-interest activities
Corp Watch	USA	Civil society organisation	Providing accurate, timely and easily accessible articles, reports and data on violations by multinational corporations
Corporate Accountability	International	Civil society organisation	Denouncing certain practices of large corporations in the food, tobacco and other industries
Corporate Europe Observatory (CEO)	Europe	Civil society organisation	Investigation and reporting on the influence of large corporations and corporate lobby groups in European Union-policy making

Corporate Research Project	USA	Civil society organisation	Assisting community, environmental and labor organizations in researching companies and industries
Corporations and health	International	Academia	Tracking the effects of corporate practices on health
CounterCorp	USA	Media	Seeking to spotlight, curtail, and ultimately prevent the corrosive economic, political, and social effects of corporate impunity around the world by raising public and media awareness, promoting critical thought and analysis, and encouraging informed discussion and debate about how corporations actually operate, and what they really add to — and subtract from — humanity's "bottom line".
Formindep	France	Civil society organisation	Advocating for an independent medical education and information (e.g., lunches and other medical events free from conflicts of interest, etc.)
Friends of the Earth	International	Civil society organisation	Disseminating information on lobbying and corporate practices
Governance, Ethics, and Conflicts of Interest in Public Health (GECI-PH) Network	International	Academia and civil society	(i) Sharing, collating, promoting and fostering knowledge of industry interference in public health, research, policy, practice and education; (ii) Documenting the governance, ethical, and COI issues that arise in the interaction between public health research, practice, and policy and industry involvement; (iii) Building capacity, setting research priorities, and acting as a forum for collaboration between researchers and civil society actors relevant to GECI; (iv) Strengthening relationships with advocacy organizations at multiple levels of governance; (v) Advocating for research and action to advance aims and objectives of the GECI network; (vi) Fostering policy dialogue, and promote evidence use through knowledge translation, monitoring and evaluation, and evidence tools
International Baby Food Action Network (IBFAN)	International	Civil society organisation	Monitoring the compliance with the International Code of Breast Milk Substitutes, and subsequent relevant World Health Assembly resolutions, as well as highlighting conflict of interests in policies and programmes both globally and nationally

	1	1	
Maison des Lanceurs d'Alerte (House of Whistle-Blowers)	France	Civil society organisation	Protecting and supporting whistle-blowers
Observatoire des multinationals (Multinationals Observatory)	International	Media	Reporting on the impact of multinationals in France on the economy, policy, society and environment
Observatorio de Multinacionales en America Latina (OMAL, Observatory of Multinationals in Latin America)	Latin America	Civil society organisation	Investigating and denunciating of impacts of transnationals corporations
Platform to Protect Whistleblowers in Africa (PPLAAF)	Africa	Civil society organisation	Protecting and supporting whistle-blowers
Southeast Asia Tobacco Control Alliance (SEATCA)	Southeast Asia	Civil society organisation	Support countries in South East Asia in developing and putting in place effective tobacco control policies, providing examples of violations of article 5.3 of the FCTC
SumOfUs	International	Civil society organisation	Holding companies accountable
Transnational Institute (TNI)	International	Civil society organisation	Supporting international efforts to establish binding international obligations of transnational corporations
Tobacco Research Group - University of Bath	UK	Academia	Reporting information on the influence of the tobacco industry on public health policy, research and practice: Tobaccotactics.org - Wiki-type website
Transparency International	International	Civil society organisation	Fighting corruption
U.S. Right to know (URTK)	USA	Civil society organisation	Advocating for truth and transparency in the food system

Note: These institutions were identified from our experience working on corporations influence on public health policy, research and practice

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			OITT NOL "
Title	1	Identify the report as a scoping review.	
ABSTRACT			ı
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	



SECTION ITEM		PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #				
RESULTS							
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.					
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.					
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).					
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.					
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.					
DISCUSSION							
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.					
Limitations	20	Discuss the limitations of the scoping review process.					
Conclusions 21		Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.					
FUNDING							
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.					

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med.;169:467–473. doi: 10.7326/M18-0850



^{*} Where sources of evidence (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

[†] A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

[‡] The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

[§] The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

Additional file 3: Search strategy for our scoping review, searches were conducted on 4 June 2019

Database: Web of Science Core Collection (WoS interface) (790 results)

TO= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance)) AND TI= ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*))

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=2003-2019

Database: BIOSIS Citation Index (Web of Knowledge interface) (249 results)

TS= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance)) AND TI= ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*))

Indexes=BCI Timespan=2003-2019

Database: MEDLINE (Web of Knowledge interface) (674 results)

(TS= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance)) OR MH= ((Manufacturing Industry OR Industry OR Commerce) AND (Codes of Ethics))) AND (TI=

((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*)) OR MH= ((Food OR Diet, Food, "and" Nutrition OR Obesity OR Alcohol Drinking OR Chemistry, Pharmaceutical OR Gambling OR Tobacco Smoking OR Environment "and" Public Health) AND (Conflict of Interest OR Public-Private Sector Partnerships OR Policy Making OR Lobbying OR Politics)))

Indexes=MEDLINE Timespan=2003-2019

Database: Embase (Embase interface) (589 results)

(corporat*:ti,ab,kw OR industr*:ti,ab,kw OR compan*:ti,ab,kw OR business*:ti,ab,kw OR firm*:ti,ab,kw) AND (address*:ti,ab,kw OR manag*:ti,ab,kw OR 'guid*':ti,ab,kw OR 'codes of conduct':ti,ab,kw OR framework*:ti,ab,kw OR standard*:ti,ab,kw OR governance:ti,ab,kw) AND (diet:ti OR nutrition:ti OR food:ti OR obesity:ti OR alcohol:ti OR drink:ti OR pharma*:ti OR gambl*:ti OR tobacco:ti OR smok*:ti OR cigarette*:ti OR oil:ti OR 'public health':ti) AND (interact*:ti OR conflict*:ti OR 'public*private':ti OR poli*:ti OR legislat*:ti OR lobb*:ti) AND [2003-2019]/py

Database: Scopus (Scopus interface) (1,516 results)

TITLE-ABS-KEY((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance))

AND TITLE ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*)) AND PUBYEAR AFT 2003

Additional file 4: URLs for examples provided in Tables 1 and 2 (alphabetical order, by country/region and institution)

- Africa Platform to Protect Whistleblowers in Africa: https://pplaaf.org/fr/
- Australia:
 - O Australian Government Lobbyists Register: https://lobbyists.pmc.gov.au/
 - O Australian National Health and Medical Research Council (NHMRC):
 - Freedom of Information: https://www.nhmrc.gov.au/about-us/freedom-information
 - Freedom of Information Disclosure Log: https://www.nhmrc.gov.au/about-us/freedom-information/foi-disclosure-log
 - Public submissions Open public consultations:
 http://consultations.nhmrc.gov.au/files/consultations/ written submissions/
 - Australian Public Service Commission Sect 4.12 Gifts and benefits: https://www.apsc.gov.au/sect-412-gifts-and-benefits
 - O Deakin University 'the University must not accept direct or indirect funding from or enter into any partnership or other arrangement with the tobacco industry, an organisation in the tobacco industry or from a foundation that accepts funds from the tobacco industry.': https://policy.deakin.edu.au/view.current.php?id=00099
 - Flinders University School of Health Science Student prizes:
 http://www.flinders.edu.au/sohs/sites/nutrition-and-dietetics/student-prizes.cfm
 - The University of Sydney ban on acceptance of funding from tobacco companies: http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2011/4
 - The University of Sydney, Charles Perkins Centre Engagement with industry guidelines: https://sydney.edu.au/content/dam/corporate/documents/charles-perkins-centre/CPC%20Engagement%20with%20Industry%20Guidelines.pdf
 - The University of Sydney School of Molecular Bioscience Scholarships and Prizes: http://sydney.edu.au/science/molecular bioscience/current students/prizes.php
- Brazil:
 - o Brazilian Health Regulatory Agency (Anvisa):
 - Agenda of senior officials: http://portal.anvisa.gov.br/agenda-de-dirigentes/-/agenda/403
 - Decree on conflict of interest related to working groups: http://portal.anvisa.gov.br/documents/219201/219401/Portaria+n%C2%BA+1.88 6+Anvisa%2C+de+07+de+outubro+de+2016/29237afa-2b7e-456c-9a61-7826a747ded4
 - o Presidency of the Republic:

- Agenda: http://www2.planalto.gov.br/acompanhe-o-planalto/agenda-do-presidente-da-republica/ (agenda available for other government officials)
- Code of Conduct for Senior Federal Administration 2014:
 http://etica.planalto.gov.br/sobre-a-cep/legislacao/codigo-conduta-compilado-2014.pdf
- Supreme Court portal: http://portal.stf.jus.br/
- Superior Electoral Court:
 - 'Disclosure of Election Candidatures and Accounts':
 http://www.tse.jus.br/eleicoes/eleicoes-2018/prestacao-de-contas-1
 - 'Accountability of candidates and political parties': http://divulgacandcontas.tse.jus.br/divulga/
- Tobacco Control Inter-Ministerial Commission: https://www.inca.gov.br/observatorio-da-politica-nacional-de-controle-do-tabaco/comissao-nacional-para-implementacao-convencao-quadro-para-o-controle-tabaco-e-seus-protocolos
- Transparency portal:
 https://esic.cgu.gov.br/sistema/Relatorios/Anual/DownloadDados.aspx and
 http://www.consultaesic.cgu.gov.br/busca/_layouts/15/DownloadPedidos/DownloadDados.aspx
 s.aspx
- Canada:
 - Alberta Securities Commission System for Electronic Document Analysis and Retrieval (SEDAR): http://www.sedar.com/
 - Canadian Medical Association Policy on physicians' interactions with industry was formally adopted by 22 out of 60 Canadian medical associations (2017): https://content.iospress.com/articles/international-journal-of-risk-and-safety-in-medicine/jrs731
 - O Government of Canada:
 - Meetings and correspondence on healthy eating:
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- International Society of Behavioral Nutrition and Physical Activity (ISBNPA) Partnership,
 sponsorship and donation policy: https://www.isbnpa.org/index.php?r=about/partnership
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 - American Academy of Nutrition and Dietetics Meet our sponsors:
 http://www.eatrightpro.org/resources/about-us/advertising-and-sponsorship/meet-our-sponsors
 - Centers for Medicare and Medicaid Services Open Payments, established through the Physician Payments Sunshine Act (PPSA), also known as section 6002 of the Affordable Care Act (ACA) of 2010: https://www.cms.gov/openpayments/
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Mechanisms for addressing and managing the influence of corporations on public health policy, research and practice: a scoping review

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4 Authors

- 5 Melissa Mialon^{1,2*} (0000-0002-9883-6441), Stefanie Vandevijvere³, Angela Carriedo-
- 6 Lutzenkirchen⁴, Lisa Bero⁵, Fabio Gomes⁶, Mark Petticrew⁷, Martin McKee⁷, David Stuckler⁸, Gary
- 7 Sacks⁹

Affiliations

- 9 ¹ School of Public Health, University of São Paulo, São Paulo, Brazil
- ² School of Nutrition and Dietetics, University of Antioquia, Medellin, Colombia
- ³ Sciensano (Scientific Institute of Public Health), Brussels, Belgium
- ⁴ World Public Health Nutrition Association (WPHNA), London, U.K.
- 13 ⁵ Charles Perkins Centre and School of Pharmacy, Faculty of Medicine and Health, The University
- of Sydney, Camperdown, NSW, Australia
- 6 Pan-American Health Organization (PAHO)/ World Health Organization (WHO), Washington
- 16 D.C., U.S.A
- ⁷ Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine, London,
- 18 U.K.

- ⁸ Dondena Research Centre and Department of Policy Analysis and Public Management, University
- 20 of Bocconi, Milan, Italy
- ⁹ Global Obesity Centre, Deakin University, Melbourne, Australia
- * Correspondence to: melissa mialon@hotmail.fr

Abstract

Objective: We identified mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice, as well as examples of where these mechanisms have been adopted from across the globe.

Design: We conducted a scoping review. We conducted searches in five databases on 4 June 2019.

Twenty-eight relevant institutions and networks were contacted to identify additional mechanisms and examples. In addition, we identified mechanisms and examples from our collective experience

working on the influence of corporations on public health policy, research and practice.

Setting: We identified mechanisms at the national, regional, and global levels.

Results: Thirty-one documents were included in our review. Eight were peer-reviewed scientific articles. Nine discussed mechanisms to address and/or manage the influence of different types of industries; while other documents targeted specific industries. In total, we identified 49 mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice, and 43 of these were adopted at the national, regional or global level. We identified four main types of mechanisms: transparency; management of interactions with industry and of conflicts of interest; identification, monitoring and education about the practices of corporations and associated risks to public health; prohibition of interactions with industry. Mechanisms for governments (n=17) and academia (n=13) were most frequently identified, with fewer for the media and civil society.

Conclusions: We identified several mechanisms that could help address and/or manage the negative influence of corporations on public health policy, research and practice. If adopted and evaluated more widely, many of the mechanisms described in this manuscript could contribute to efforts to prevent and control non communicable diseases.

Registration: The protocol was registered with the Open Science Framework on 27 May 2019 (https://osf.io/xc2vp).

Strengths and limitations of this study

- This review is the first attempt to develop an inventory of mechanisms for addressing and managing the influence of corporations on public health policy, research and practice.
- Many of the mechanisms identified in our review have been developed with no restriction on the type of industries targeted.
- The list compiled here is non-exhaustive and by nature, subject to changes, as an
 increasing number of governments and other institutions take measures to prevent undue
 influence from industry.
- Not all mechanisms have yet been thoroughly evaluated; therefore, we did not assess the validity of the included studies.
- Mechanisms at the sub-national level have not been included in our study.

Background

There is growing evidence, coupled with public awareness, that the economic power of corporations, particularly that of large transnationals, has led to the defeat, delay, and weakening of public health policies around the world (1–3). Perhaps the best evidence of the harmful influence of corporations on public health policy is in the field of tobacco control. In the 1990s, during litigation in the USA, leading tobacco companies released large quantities of internal documents (4,5), revealing how, over decades, they sought to deny the threat that tobacco posed to health and to thwart measures to reduce smoking (6–8). Recent research has shown that tobacco industry influence has resulted in a policy shift towards industry interests in some regions, such as the European Union (9). Tobacco continues to kill millions (10). An emerging body of evidence is revealing the use of similar corporate efforts to defeat, delay and weaken public health policies and influence research and practice, from a range of sectors including the alcohol, food, gambling, oil and pharmaceutical industries, among others (1,11–15). These corporate practices that have a negative impact on health, and that are used across industries, are increasingly referred to as 'commercial determinants of health' in the literature (16).

Industry efforts to influence public policy, research and practice are often referred to as 'corporate political activity' (CPA). The CPA includes: coalition management (influence on third parties such as health organisations, communities and the media); information management (manipulation of the evidence base, through the funding of research, ghost-writing, etc.); direct and indirect involvement in policy making; litigation or the threat of legal actions; and discursive strategies seeking to frame the dominant narrative in their favour (8). Several institutions have been established to monitor the influence of corporations on public health policy, research and practice, such as Corporate Europe Observatory in Europe and US Right to Know in the USA (see Supplementary File 1 for a non-exhaustive list of such organisations). Major reviews of the determinants of health also increasingly and explicitly examine the influence of corporations on public health policy, research and practice (3). Approaches have recently been developed to analyse this influence systematically. The 'Corporate Permeation Index' developed by Lima and Galea measures "the extent to which corporations are embedded in the political, legal, social, economic and cultural fabric of a country" (17). This index seeks to quantify the penetration of corporations in a given country, and was recently implemented for 148 countries over the period 2010-5 (17). The results showed extensive international variation (17). The World Health Organization, as well as institutions in academia and civil society, have made recommendations to identify and monitor the influence of the tobacco industry on public health policy, research, and practice (18–20). Mialon et al. built on this work and developed a step-by-step approach to monitor the CPA of the food industry within countries, using publicly available information (11). To date, the approach has been implemented in more than 20 countries (21–27). One commonly identified drawback of such approaches is that they are limited by a lack of relevant and comprehensive publicly available information for most industries other than tobacco, where millions of internal documents are now freely available to the public (21,23,24,27). Evidence of this influence for other industries is typically sparse and not systematically compiled. It is obtained from a range of sources, including internal documents, primarily leaked by whistle-blowers, publicly available information

(e.g., from media releases, companies websites, data on lobbying, etc.) and interviews with those who interact with these companies.

National health authorities and civil society organisations have increasingly been concerned with the weakening, delay and obstruction of public health policies due to harmful corporate practices (2,28,29). There is also increasing awareness and acceptance among the public health community, particularly in high income countries, that interactions with these industries require extreme caution, and, at the minimum, transparency coupled with a detailed understanding of their mode of operation (30,31). The public health community looks for inspiration to the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) (32), with recent calls for a Framework Convention on Food Systems (FCFS) (3) and a Framework Convention on Alcohol Control (FCAC) (33). Article 5.3 of the FCTC bars any interactions between governments and the tobacco industry except for implementing tobacco control, led by public health officials (32). As of December 2018, 181 countries had ratified the WHO FCTC, covering 90% of the world population (34). The extent of implementation of key FCTC regulatory measures in countries is significantly associated with lower smoking prevalence (35). However, the tobacco industry, often through pseudo-scientific front groups, still wields influence that allows it to avoid or water down regulatory initiatives (36).

The demand for mechanisms to protect the policy process from undue corporate influence is growing. One example of how this became evident is when, in 2012, Member States requested the World Health Assembly (Resolution WHA65.6) to develop risk assessment, disclosure and management tools to safeguard against conflicts of interest (COI) in policy development and implementation of nutrition programmes (37). The WHO also recently declared that it would no longer partner with alcohol industry actors during the development of policies to reduce harmful drinking (38). The need for guidance on how to address and manage undue influence from corporations is also evident in research and practice (39,40).

58 148

60 149 Identification and monitoring of the industry influence on public health policy, research and practice is a necessary but insufficient step in protecting and promoting public health. It is essential that international organisations, governments, academia, the media and civil society are equipped to tackle potential threats to global health. Our study objective was, therefore, to identify mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice, as well as examples of where these mechanisms have been adopted.

Methods

We conducted a scoping review, where we searched scientific publications (peer-reviewed articles, letters to the editor, commentaries, etc.) and reports from governments, international organisations and civil society. We excluded books, as well as presentations from conferences, and other events where no full articles were available.

A scoping review was deemed to be the most suitable method for this study as we intended to summarise evidence from a heterogeneous body of research, from academia, governments, civil society organisations and other actors in public health (41). A scoping review also advances knowledge in an emerging field of research, which is the case for mechanisms to address the influence of corporations on public health (41). In addition, it helps examine the nature of available research and research gaps in the literature, which could inform future research (41).

We used the PRISMA Extension for Scoping Reviews (PRISMA-ScR, see Supplementary File 2) to prepare our scoping review protocol and our manuscript. The protocol was revised by the research team and registered with the Open Science Framework on 27 May 2019 (https://osf.io/xc2vp).

In our scoping review, the term 'mechanism' refers to: policies, regulations, guidelines, codes of conduct, frameworks, standards, initiatives or other tools to address and/or manage the influence of corporations on public health policy, research and practice.

The terms 'industry' and 'corporations' are employed interchangeably in this manuscript to refer to the manufacturers, wholesalers, retailers, distributors, food service providers, as well as producers

of raw material. We also include those organisations acting on their behalf, overtly or covertly, including some trade associations, public relations firms, 'philanthropic' organisations, research institutions, and other individuals and groups.

Database searches

Search strategy

The development of the search strategy was informed by previous systematic and scoping reviews that analysed the influence of corporations on public health policy, research and practice (7,12,13) or that presented mechanisms to address and/or manage that influence (for the food industry for example (40)). We used keywords and Medical Subject Headings (MeSH) terms. The search strategy was developed with the help of a librarian at the University of Antioquia, Colombia.

We conducted systematic searches in five databases:

- Web of Science Core Collection (Web of Knowledge interface);
- BIOSIS (Web of Knowledge interface);
- MEDLINE (Web of Knowledge interface);
- Embase (Embase interface);
- Scopus (Scopus interface).

The terms used in the search strategy were tailored to the requirements of each database and included ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or 'guid*' or 'codes of conduct' or framework* or standard* or governance)). In addition, we searched the following key terms in the titles only, as a broader search yielded too many irrelevant results: ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or 'public health') AND (interact* or conflict* or 'public*private' or poli* or legislat* or lobb*)).

Our search strategy for Web of Science Core Collection (Web of Knowledge interface) was:

TO= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance)) AND TI= ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*))

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-

EXPANDED, IC Timespan=2003-2019

The search strategies for other databases are presented in Supplementary File 3. Databases were searched on 4 June 2019.

Eligibility criteria

To be included in this review, publications had to:

- Be published in 2003 and later, when the WHO-FCTC came into effect;
- Be published in English, French, Spanish, Portuguese, or Italian languages for which members of our team had at least working proficiency;
- Analyse, use, compare, propose or evaluate one or several mechanisms for addressing and/or managing the influence of corporations on public health policy, research and/or practice;
- Focus on the influence of the alcohol, food, gambling, oil, pharmaceutical and/or tobacco industries on public health policy, research and practice;
- Focus on mechanisms at the international, regional (e.g., Europe) or national level.

Selection of sources of evidence

All citations identified were downloaded and imported to the web-based bibliographic manager F1000 Workspace, where duplicate citations were removed. Data extraction and analysis were led by the first author. MM screened all titles and abstracts, when available, for eligibility. 10% of the material was double screened by GS. MM then obtained the full-texts of potential eligible material.

When publications were not available online, MM contacted the first authors of the materials to obtain a copy of the documents (n=13). MM assessed the eligibility of that material against the eligibility criteria. GS assessed the eligibility of 10% of the documents. Disagreement was resolved by consensus after discussion between MM and GS. For documents that were included in our review, MM searched their bibliographic reference sections (backward searches) and searched documents that were citing them; using Scopus (forward searches) to identify additional relevant material.

Additional searches

Twenty-eight institutions and networks working on the industry influence on public health policy, research and practice, as detailed in Supplementary File 1, were contacted in May 2019 to identify additional mechanisms and examples. These institutions were identified through the authors' networks. Only one of these institutions answered our requests. In addition, we identified mechanisms and examples of their adoption from our collective experience working on the influence of corporations on public health policy, research and practice.

We included documents from the grey literature, including from international agencies (e.g., WHO, World Bank, etc.), national government agencies, universities, academic journals, international professionals associations, the media, research funders and civil society organisations.

Data charting process and data items

Data was charted by MM in an Excel table, and the variables for which data were sought were:

- Whether or not the study was funded by corporations or had authors that were employed
 by corporations in the alcohol, food, gambling, oil, pharmaceutical or tobacco industries
 (as disclosed in the documents identified through our searches);
- Individuals and institutions targeted by the mechanism: governments and international organisations (with details about specific institutions targeted by the mechanisms within these organisations); academia (including researchers, universities, scientific journals, research funders, ethics review boards, etc.), the media and civil society;

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- Details about the mechanism for addressing and/or managing the influence of corporations on public health policy, research and practice, including the type of mechanism described;
- Information about specific examples where the mechanism has been adopted, either fully or to some extent, including the name of the country, the name of the policy, and the URL.

Synthesis of results

We identified four broad types of mechanisms for addressing and managing the influence of corporations on public health policy, research and practice, through our interpretation of the data, and as presented at the beginning of our results section. Most mechanisms identified in this review pertain to one or more of these four broad categories

We present the results of our review in two tables: one table with mechanisms for governments and international organisations and one table with mechanisms for academia, the media and civil society. We decided to first present data for individuals and institutions in governments as they may have a legal obligation to address undue influence from corporations and conflicts of interest, while this might not be the case for other actors in public health.

We then grouped each mechanism by institution (ministries, universities, academic journals, etc.), in no specific order. Where multiple mechanisms targeting particular aspects of corporate influence were identified, we only included the most stringent mechanisms, as determined by ourselves.

We also include examples where these mechanisms have been adopted, fully or to some extent, as identified in the documents collected during our systematic searches or as identified through additional searches. The URLs for the examples included in our scoping review are available in Supplementary File 4. We made a particular effort to represent a broad range of countries from different regions of the globe in these examples, although our list is non-exhaustive.

Exclusion criteria

We excluded documents funded by corporations or whose authors were employed by corporations in the alcohol, food, gambling, oil, pharmaceutical and tobacco industries (as disclosed in the

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documents identified through our searches), as these represented an inherent COI in the development of mechanisms to address and/or manage the influence of these industries.

In our analysis, we excluded mechanisms:

- that were proposed or developed by the industries mentioned above when these
 were presented among other mechanisms in non-industry funded documents (e.g.,
 reports from multi-stakeholders platforms);
- only addressing marketing practices, for example:
 - o the sponsorship of sport;
 - the interactions between pharmaceutical companies and doctors,
 pharmacists and other healthcare professionals (including during their training) when those have the sole purpose of selling products.
- targeted at corporations for managing their interactions with government, academia, the media and civil society;
- targeting corporate practices that are almost universally illegal, such as criminal
 activity and bribery of government officials, although we recognise that these
 other forms of influence exist. These are beyond the scope of this manuscript.

We also excluded documents that did not analyse, use, compare, propose or evaluate a mechanism per se, but instead discussed its adoption in a specific context (for example the adoption in 9 countries of a transparency policy for the interactions between healthcare professionals and the pharmaceutical industry (42)). In this case, we used these examples in our results section to illustrate instances where a mechanism was adopted.

Patient and Public Involvement statement

Patients and the public were not involved in this research.

Results

The PRISMA flow diagram for our scoping review is presented in Figure 1. In total, 2,015 documents were identified in the databases searches (excluding duplicates). 1,998 documents were

excluded and 17 included after screening of their titles and abstracts. In addition, 6 documents were identified through backward searches and 12 documents were found through additional searches. No new documents were identified through forward searches. In total, 35 full-texts were included for analysis. Subsequently, 2 articles were excluded because they did not present mechanisms for addressing and/or managing the industry influence; 1 article was excluded because we could not retrieve its full-text, despite contacting its first author; 1 article was excluded because it only discussed marketing practices.

< Insert figure 1: PRISMA flow diagram>

In total, 31 documents were included in our scoping review. All references included in our scoping review came from high income countries, in particular the USA (n=9). Eight documents were published by international organisations based in France, Switzerland and the USA. Only eight documents were peer-reviewed articles. Other documents included letters to the editors, commentaries and other pieces in scientific//clinical journals, as well as reports by national and international organisations. Nine documents discussed mechanisms to address and/or manage the influence of all sorts of industries. The other documents targeted specific industries (these categories are not mutually exclusive): 6 for the alcohol industry; 7 for the food industry; 5 for the gambling industry; 5 for the pharmaceutical industry; 6 for the tobacco industry. None of the documents discussed mechanisms to address and/or manage the influence of the oil industry. Most documents included mechanisms for governments (n=17) and academia (including researchers, universities, scientific journals, research funders, ethics review boards, etc.) (n=13). Three documents proposed mechanisms for civil society and one for the media. We found many examples where these mechanisms have been adopted, as described below.

Many of the mechanisms identified in our review, as discussed in the sections below, focus on the management of COI. COI provisions might not be sufficient to reduce industry influence and that interactions with industry can be ethically problematic and may influence public health policy, research and practice even when COI policies are not implemented (43,44). We identified four main

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types of mechanisms to address undue influence from corporations (categories are not mutually exclusive): i) managing the interactions with industry and COI; ii) increasing transparency about these interactions and COI; iii) identifying, monitoring and educating third parties in academia, civil society, and the media about the practices of corporations and associated risks to public health; iv) prohibiting any interaction with industry. There are other types of mechanisms discussed in the literature, such as the protection of whistle-blowers, or mandatory taxes for companies to be used by an independent organisation to fund public health research and practice, as detailed below.

Governments and international organisations

International organisations and governments have a mandate to protect and promote public health. Governments are in charge of the initiation, development, implementation and evaluation of public health policies. As such, they are a primary target of corporations whose profits might be threatened by such policies, during all phases of the policy cycle but in particular during initiation and development of policies.

In our scoping review, we identified 23 mechanisms for addressing and/or managing the influence of corporations on governments and international organisations (Table 1).

There are growing concerns about how international organisations, including the WHO, engage with corporations and in response, the WHO has recently addressed some of these concerns, most notably in its Framework for Engagement with non-State Actors (FENSA) (37,45). There is criticism of FENSA, as it could be interpreted as an invitation for increased collaboration between the WHO and industry, suggesting that this is acceptable if managed as per WHO guidelines (46).

The Organisation for Economic Co-operation and Development (OECD) published several documents that are relevant for the current scoping review, including guidelines for the management of conflicts of interest (47,48). In 2017, it developed a framework for 'Preventing Policy Capture' (49). It also published a series of reports on lobbying regulation (50) and on the funding of political parties and elections campaigns (51).

The World Bank developed a 'Public Accountability Mechanisms Initiative', which includes specific recommendations and "provides assessments of countries" in-law and in-practice efforts to enhance the transparency of public administration and the accountability of public officials" (52). Many countries and international organisations have internal policies and procedures to manage COI, some of which require the disclosure of these interests to the public. There are, in addition, existing tools that can help in assessing risks to individuals and institutions in public health when they are considering engaging with corporations, such as the Purpose, Extent, Relevant-harm, Identifiers, Link (PERIL) indicators (53) or the decision-making tool developed by the World Health Organization for the prevention and management of COI in nutrition programmes (54). For 22 of the 23 mechanisms identified in our scoping review, we found evidence of their adoption, in different parts of the world, to various degrees. Many of the examples identified in Table 1 refer to the interactions of governments and international organisations with the tobacco industry, following the ratification of the WHO FCTC. However, no country, to date, has entirely restricted the influence of corporations on public policy.

Table 1: Mechanisms for addressing and/or managing the influence of corporations on public health policy (non-exhaustive)

Table 1. Me	chanisms for addressing and/or managing the influence of corp		ype o				and poncy (non-exhaustive)
Individuals and institutions	Mechanisms identified through our scoping review	Transparency	Management	Identification, monitoring & education	Prohibition	Other type	Examples where these mechanisms have been adopted (fully or to some extent)
Ministries and related agencies in	Public health plan or strategy that explicitly includes the protection of public health policies from industry interests, including the possibility to challenge demonstrable industry influence (55,56)		X	,0	4	X	
charge of health, agriculture, education, environment, and trade/industry Parliament and Senate	 A set of policies related to conflicts of interest (47,48): information about whom to accept funding from, based on a risks analysis a clear and realistic description of circumstances and relationships that can lead to a conflict-of-interest (49) information about how interactions with corporations (and third parties acting on behalf of the industry) and conflicts of interest, both at the individual and institutional levels, will be reported, reviewed, documented, monitored and managed (including restricted, if necessary (55–57)), as well sanctions in case of non-compliance with the policy (52) requirements for government officials to declare and divest themselves of direct interests in specific industries related to health (e.g., tobacco industry) (55,56) restrictions on government institutions and their bodies from having financial interests in specific industries related to health (e.g., tobacco 	Х	Х	х	х		 Brazil - Presidency of the Republic - Code of Conduct for Senior Federal Administration Colombia - Congress of Colombia - Law 190 of 1995, article 15 - Regime of civil servants European Union (EU) - Guidelines on the prevention and management of COI in EU decentralised agencies France - Penal Code - Article 432-12 (individual conflicts of interest) Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Law of Administrative responsibilities of civil servants (individual conflicts of interest) Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling Interference in Policy Making and Implementation - Conduct of Public Agency Officials

 industry), unless they are responsible for managing a government's ownership interest in a State-owned company (55,56) restrictions on government institutions and their bodies from accepting contributions (financial or in-kind) from specific industries related to health (e.g., tobacco industry) or from those working to further its interests, except for compensations due to legal settlements or mandated by law or legally binding and enforceable agreements (55,56) Officials that should be covered by the above mechanism include: Ministers; Senior public servants; Customs officers; Contract managers; Prosecutors; Tax officials; Judges; Procurement officials; Ministerial cabinet staff; Auditors (47) 				Philippines: Civil Service Commission - Department of Health - Joint Memorandum Circular no. 2010–01 on Protection of the Bureaucracy against Tobacco Industry Interference. Department of Health - Memorandum No. 2010–0126 on Protection of the Department of Health, including all of its Agencies, Regional Offices, Bureaus or Specialized/Attached Offices/Units, against Tobacco Industry Interference. Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry World Health Organization: Article 5.3 of the Framework Convention on Tobacco Control Framework for Engagement with non-State Actors (FENSA)
Public financial disclosure (combination of income, assets, liabilities, business activities, and incompatibilities with public mandates) for individuals in government. This would include sanctions if these disclosures are not filled or contain omissions or misleading information (48)	X	X		 Colombia - Congress of Colombia - Law 190 of 1995, article 15 - Regime of civil servants EU - European Parliament - Declarations of interests - Members of the European Parliament France - High Authority for Transparency in Public Life Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Federal Law for administrative responsibilities of public servants, Article 8, XV
Policy on mandatory waiting periods after the termination of employment before individuals from a company that is regulated by a government agency can work in this government agency and vice-versa (48,55,56,58)			Х	USA - State Legislative Prohibitions on "Revolving Doors", a 'practice of public officials or employees abandoning public service for lobbying positions'

Procedural guidelines for committees or advisory groups related to public health on: • size • constituency • membership • role • members duties and rights • public disclosure of the composition of the group • public disclosure of the minutes of the meetings • public disclosure of the declarations of conflicts of interest for all members • potential exclusion of individuals who have a conflict of interest (59) That might include a prohibition for any person employed by specific industries related to health (e.g., tobacco industry) or any entity working to further their interests to be a member of any government body, committee or advisory group that sets or implements public health policy (55,56)	X	X	X	X	Brazil:
Policy for the receipt of gifts and of donations to individuals in government (including prohibitions), as well as public disclosure of the list of such donations when these are permitted (48,55,56)	Х	X	Х	X	 Australia - Australian Public Service Commission - Sect 4.12 Gifts and benefits Brazil - Code of Conduct for Senior Federal Administration 2014 Canada - Office of the Conflict of Interest and Ethics Commissioner - Registry of gifts EU - European Parliament - Register of gifts - 8th parliamentary term
Ministers' and other government officials and employees' diary public disclosures, with an indication of dates, times, organisations and individuals met, as well as purpose and minutes of all meetings (49,55,56,59)	X		X	V	 Brazil: Anvisa - Agenda of senior officials Presidency of the Republic - Agenda of the President of the Republic: (agenda available for other government officials) Canada - Government of Canada - Meetings and correspondence on healthy eating EU - European Parliament - Committees - Draft agendas

Public disclosure of correspondence (including emails) and transcriptions of telephone conversations between corporations (and third parties acting on behalf of the industry) and individuals and institutions in government (55,56)	X	X			Canada - Government of Canada - Meetings and correspondence on healthy eating Russian Federation - public disclosure is included in the Federal Law N 15-FZ of February 23, 2013 On Protecting the Health of Citizens from the Effects of Second Hand Tobacco Smoke and the Consequences of Tobacco Consumption
Public disclosure of the list and content of submissions (current and closed) to public consultations on public health issues, as well as dedicated personnel to review the evidence in these submissions (59)	X	X			Australia - Australian National Health and Medical Research Council (NHMRC) - Public submissions - Open public consultations EU - European Commission - Consultations - Public Health USA - US Food and Drug Administration —Code of Federal Regulations Title 21 - Food and Drugs
Mandatory tax for companies to be used by an independent organisation (government agency for example) to fund public health research and practice (60)	9	•		X	Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter Three - Financing of tobacco control activities: Article 10 - Health Promotion Foundation: 'The Foundation shall be comprised by the budget, equal to 2 percent of tobacco excise tax.'
Public availability of companies' financial reports	X	X	4		 Canada - Alberta Securities Commission - System for Electronic Document Analysis and Retrieval (SEDAR) USA - U.S. Security and Commission Exchange: Edgar, company filings
Public disclosure of legal disputes and corresponding decisions in which corporations were and are involved	X	X			Brazil - Supreme Court portal Chile - Supreme Court portal
 Formal freedom of Information (FOI) request process with: procedures for accessing information, including justifiable and reasonable search and retrieval fees for non-personal information narrow and explicitly identified limitations to disclosure requirements enforcement mechanism deadlines for the release of information sanctions for non-compliance proactive disclosure for certain type of information (52) 	X				 Australia - NHMRC - Freedom of Information Chile - Ministry General Secretariat of the Presidency - Law n°20285 on access to public information Colombia - Presidency of the Republic of Colombia - Law 1712 of 1994 on transparency and right to access to national public information EU - European Commission - Public access to documents India - Right to Information Act, 2005 Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Federal Law of transparency and access to public information

						South Africa - South African Government - Promotion of Access to Information Act 2 of 2000
FOI disclosure log, containing information which has been released in response to an FOI access request	X					 Australia - NHMRC - Freedom of Information Disclosure Log Brazil - Transparency portal Chile - Transparency portal Ireland - Department of Health - Freedom of Information Request Log United Kingdom (UK) - House of Lords: FOI Request Logs - UK Parliament
Policy which aims to minimise industry involvement in health policy-making (55,56)		X		X		Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 1: Article 4. State Policy on Tobacco Control Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling Interference in Policy Making and Implementation - Manufacturer and Related Parties Prohibited to Participate in Tobacco Product Control and Regulatory Task Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry
Policy to reject partnerships, including in research, with specific industries (e.g., tobacco industry) (55,56,61)	7,		.0	X		 Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 2: Article 8. Ban on advertising, promotion and sponsorship of tobacco products Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling Interference in Policy Making and Implementation - Prohibition on Partnerships and Participations Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry
Regulation to restrict direct industry contributions to civil society organisations (62)				X		Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 2: Article 8. Ban on advertising, promotion and sponsorship of tobacco products - 'It shall be prohibited to provide financial, material aids and contributions to social, health, welfare and environmental organizations by the tobacco industry or through another organizations under the name of "Social responsibility"
Protection of whistle-blowers and investigative reporters (47,48), which could include: • guarantee of confidentiality • secure communication • legal assistance • civil and criminal sanctions against the perpetrators of retaliation					X	 Africa - Platform to Protect Whistleblowers in Africa Canada - Government of Canada - Justice Laws website - Criminal Code France - Maison des lanceurs d'alerte (House of whistle-blowers)

against whistle-blowers					
 Lobbying regulation (47,49,50,55,56) which: provides a clear and unambiguous definition of lobbyist and lobbying activities targeted by regulation (50) set standards for expected behaviour, for example to avoid misuse of confidential information, conflict of interest and prevent revolving door practices includes procedures for securing compliance, in a coherent spectrum of strategies and mechanisms, including monitoring and enforcement includes a five-year ban on lobbying for former ministers, ministerial staffers and senior public servants includes mandatory penalties in case of the provision of false or misleading information in accordance with national law 	X	X		X	Chile - Ministry General Secretariat of the Presidency - Platform Lobby Law - Code of good practices for lobbyists
Public disclosure of lobbyists and information on objectives, beneficiaries, funding sources and targets (49,50,55,56,63)	X		X		Australia - Australian Government Lobbyists Register Chile - Ministry General Secretariat of the Presidency - Platform Lobby Law - Registry of lobbyists France - High Authority for Transparency in Public Life - Registr of Lobbyists USA - Office of the clerk - House of Representatives - Lobbying Disclosure
Policy that prohibits government to endorse, support, partner with or participate in industry sponsored activities, including 'corporate social responsibility' (e.g., tobacco industry) (55,56)			0	X	Nepal - Tobacco Product Control and Regulatory Directive 2014 Chapter 3: Controlling Interference in Policy Making and Implementation - Prohibition on Assuming Organizational Social Responsibility - 'The public agency officials are prohibited from participating in any tobacco industry sponsored progran to accept assistance or awards, as well as participate in national and international programs like meetings, trips training, seminars and conferences organized with invitation and assistance from tobacco industries.' 'It is prohibited to accept tobacco industry assistance or collaboration offered in the name of educational development, ethnic or social class upliftment or supporting emergency services and manufacturers and related parties are prohibited from providin such assistance'
Awareness raising activities to inform and educate all branches of government and the public about the nature of harmful products, the need to protect public health policies from commercial and other vested interests of corporations (e.g.; tobacco industry) and the strategies and tactics used by the industry to interfere with the setting and implementation of public health policies:			X		Djibouti - Law n°175/AN/07/5L Concerning Organization for the Protection of Health against the Tobacco Habit - Chapter VIII: Education, communication and public awareness Nepal - Tobacco Product Control and Regulatory Directive 2014 Chapter 4: Develop Public Awareness and Make Public Places

	 governmental administrative circulars (circulars); meetings, workshops, presentations, and consultations (meetings); training based measures (training), in which awareness raising is embedded in the training of civil servants and legal adviser of government ministries; intra-governmental advocacy by health ministries (or specific agencies) aimed at providing intelligence to other parts of government targeted by the industry in the context of specific policy conflicts (intra-governmental advocacy); ongoing campaigns by national, regional, and local health officials aimed at highlighting the policy value of protecting health policy from industry interference (campaigning); mass media campaigns which use local television advertisements, newspaper articles, radio call in shows, and websites to raise awareness of industry interference among the general public (public awareness raising).' (48,55,56,61) 					•	Smoke and Tobacco Consumption Free Panama - Ministry of Health - Resolution No. 745 on the National Commission for the Study of Tobacco
Political parties and commissions in charge of elections campaigns	Regulation of the funding of political parties and elections campaigns (49,51,55,56): • timely, reliable, accessible and intelligible public disclosure of donations • prohibitions for certain type of private contributions such as foreign interests or corporations • information about third parties acting on behalf of the industry • limits on donations • limits on anonymous donations • sanctions for violators of the law • independent and efficient oversight	X	X	X	X	•	Brazil - Superior Electoral Court: O Accountability of candidates and political parties O Disclosure of Election Candidatures Accounts Chile - Electoral Service - Donations France - National Assembly - Financing of political life: parties and electoral campaigns
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Academia, the media and civil society

We identified, through our systematic searches, 26 mechanisms for addressing and managing the influence of corporations on academia, the media and civil society (Table 2).

Individuals and institutions in academia, the media and civil society (including public health professionals, civil society organisations, etc.) often engage with corporations, through the sponsorship of events, funding of research project, scientific awards or other types of interactions. These are standard practices, and while there are multiple reasons for them to happen, the scarcity of public funding and the vast resources of corporations are often mentioned (43). There is, however, growing concern that the influence of the industry poses threats to the independence, integrity and credibility of these individuals and institutions (29.64–70).

We found examples, from across the world, where these 21 of these 26 mechanisms have been adopted. Some universities refuse funding from the tobacco industry; some make transparent the interactions between their staff members, students and corporations. Many institutions in academia and civil society have conflicts of interest policies, which is also the case for some scientific journals and professionals associations. The provision of education in universities, conferences and other meetings and to journalists was also cited.

Table 2: Mechanisms for addressing and/or managing the influence of corporations on public health research and practice (non-exhaustive)

Table 2. Me	chanisms for addressing and/or managing the influence of cor	Ī .	ype of				leatur research and practice (non-exhaustive)
Individuals and institutions	Mechanisms identified through our scoping review	Transparency	Management	Identification, monitoring & education	Prohibition	Other type	Examples where these mechanisms have been adopted (fully or to some extent)
Universities and other research institutions ¹	 Policy on conflicts of interest and external engagement that includes (40,61,71–74): a clear and realistic description of circumstances and relationships that can lead to a conflict-of-interest information about whom to accept funding from (including restrictions on funding from specific industries, such as the tobacco industry), based on a risks analysis information about how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided, if necessary), reported, reviewed, documented, managed, or eliminated, as well sanctions in case of non-compliance with the policy requirements for full disclosure of funding sources and financial interests in research publications and media releases requirements for continuous reporting from projects with industry funding if institutional policy permits active management of obvious conflicts of interests No money should be accepted if it explicitly constrains the capability of institutions to do their work without interference from the funder (71) Institutions should not accept money if doing so pushes them to be something that is not consistent with their mission (e.g., to promote the health of the public) (71,74) 	х	X	x	X	V	Deakin University - 'the University must not accept direct or indirect funding from or enter into any partnership or other arrangement with the tobacco industry, an organisation in the tobacco industry or from a foundation that accepts funds from the tobacco industry.' The University of Sydney - ban on acceptance of funding from tobacco companies The University of Sydney, Charles Perkins Centre - Engagement with industry guidelines USA - American Association of University Professors - Recommended Principles to Guide Academy-Industry Relationships USA - National Institutes of Health - Financial Conflict of Interest
	Public disclosure and reporting to the institution's conflict of interest committee of: • the declarations of conflicts of interests of individuals, throughout all	X		X			Australia The University of Sydney - School of Molecular Bioscience - Scholarships and Prizes

	 stages of design, implementation and reporting (59,61,71,74–77) funding sources and other donations from corporations (and third parties acting on behalf of the industry) to individuals and institutions fellowships, awards and other prizes from corporations (and third parties acting on behalf of the industry) to individuals and institutions 						•	 Flinders University - School of Health Science – Student prizes USA - The University of California - General University Policy-APM - 025 regarding academic appointees - Conflict of Commitment and Outside Activities of Faculty Members
	Policy on academic freedom, autonomy and control (71)		X				•	France - Education Code, L952-2 on academic freedom New Zealand - Education Act 1989 No 80, Public Act 161 Academic freedom
	Policy on academic publication rights (40,61,74)		X				•	USA - Standford University - Standford University industrial contracts office - Researcher's Guide to Working with Industry
	Provision of education to students on how to evaluate information provided by corporations			X			•	USA - Structured Pharmaceutical Representative Interactions and Counterdetailing sessions as Components of Medical Resident Education (78)
	Policy to ensure that (75): research priorities and the distribution of funding is determined by researchers who have not received direct or indirect (through third institutions) funding from corporations academic reviewers should not include those who have accepted funding in the past 3 years from industry who have a conflict of interest in the research to be conducted		X		X		•	UK - National Health Service (NHS) England - Managing Conflicts of Interest: Statutory Guidance for Clinical Commission Groups and Conflicts of interest management templates, including registers of gifts and hospitality UK – Wellcome - Conflicts of interest policy USA - National Institutes of Health (NIH) - Financial Conflicts of Interest for Awardees - standard operating procedure
Research funding committees, panels or	Policy for government to conduct clinical trials and other research activities involving patients or to choose the researchers who would design and conduct the tests (79)			6	0,	X		
boards	Public registry of all clinical trials and other research activities involving patients with information on the study design, methods, and full results (40,59,72,79–81).						•	USA - ClinicalTrials.gov - a public database operated by the National Institutes of Health (NIH) (most clinical trials are conducted by pharmaceutical companies)
	Publication of all relevant data, outcomes and results of clinical trials and other research activities involving patients, including null results, adverse effects and stopping rules, administrated and monitored by an independent institution. (59,61,79–81)	X		X		X		
Ethics review boards	Policy to assess the appropriateness of funder–researcher relationships (72)		X				•	Germany - Institute for Therapy Research Munich - Policy on Competing Interests International - World Medical Association Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects - Ethics Committees - 'This committee must be transparent in its functioning, must be independent of the researcher, the sponsor and any other undue influence and must be duly qualified'

	Policy to reject manuscripts funded by or written by contributors from specific industries (and third parties acting on behalf of the industry) (82,83)				X		International - Cochrane policy on commercial sponsorship of Cochrane Reviews and Cochrane Group International - Journal of Human Lactation does no publish research funded by companies that are not compliant with WHO Code on the Marketing of Breast-Milk Substitutes International - Tobacco control, BMJ, Heart, Thorax, BMJ Open, PLoS Medicine, PLoS One, PLoS Biology, Journal of Health Psychology, journals published by the American Thoracic Society - do not publish research funded by the tobacco industry
	Policy to discourage individuals from engaging in industry-led 'ghost-writing' or ghost authorship (77)		X				Neurology Journals - Authorship and Disclosures Annals of Internal Medicine - Exorcising Ghosts and Unwelcome Guests
Academic	Policy for addressing, managing, through declarations and disclosure, conflicts of interests for editors (61,72,75)	X	X	X			 International - the BMJ - Staff declarations International - Public Health Nutrition - Editors conflict of interest statements International Society of Addiction Journal Editors - declarations of conflicts of interest for contributors and editors
journals	 Policy including: a mandatory declaration and disclosure of conflicts of interests for contributors (which would include details about conflicts with third parties acting on behalf of the industry) (61,72,73,75,77,82,83) a positive statement that all contributors in a publication had complete control over the research process (72,77) a statement, in the methods section, about the role of the funding source in the design, conduct, analysis and reporting of the data (73,77) additional steps that will be undertaken by the journal to obtain the most meaningful disclosures from authors, such as quick search of the tobacco industry documents for the names of authors of papers on tobacco or the invitation of a peer reviewer with tobacco industry document research experience (73) 	X	X	X	2	2	International Committee of Medical Journal Editors (ICMJE) - Conflict of Interest form
	Policy that requires that all trials be registered at the time of initiation of the study (83)	X		X		X	USA - American Journal of Clinical Nutrition - information for authors: format and style requirements
	Policy to ensure that advertising revenue is independent of corporations that have a conflict of interest with the journal's main mission (79)				X		International - BMJ - The BMJ and sister journals no longer carry advertisements for breastmilk substitutes
Professional associations and civil society organisations ²	 Policy or code of conduct (72) including information about: whom to accept funding from, including bans on the acceptance of funding from specific industries (e.g., tobacco industry) (including third parties acting on behalf of the industry) based on a risks analysis (62,82) how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided if necessary), reported, reviewed, 	X	X	X	X		 Canada - In 2017, the Canadian Medical Association's policy on physicians' interactions with industry was formally adopted by 22 out of 60 Canadian medical associations International Network on Brief Interventions for Alcohol & Other Drugs (INEBRIA) - Position Statement on the alcohol industry International Society of Behavioral Nutrition and Physical Activity

 documented, managed, or eliminated, as well sanctions in case of noncompliance with the policy (84) Individuals should not solicit or accept gifts from specific industries (e.g., tobacco industry) (and third parties acting on behalf of the industry) that might influence or appear to influence objectivity, independence, or fairness in clinical and professional judgment (84) No money should be accepted if it explicitly constrains the capability of the institutions to do their work without interference from the funder (71) Institutions should not accept money if doing so pushes them to be something that is not consistent with their mission to promote the health of the public (71,80,85) 					 (ISBNPA) - Partnership, sponsorship and donation policy UK - Royal College of Paediatrics and Child Health (RCPCH) - RCPCH statement on relationship with formula milk companies World Obesity Financial Relationship Policy World Public Health and Nutrition Association (WPHNA) - Conflict of interest and ethics policy
Governance workshops: governance boards are assisted in their deliberations on industry involvements by presentations or workshops to raise their awareness of the issues and help them reach an informed position on the extent of industry involvement (62)		X			
 Public disclosure of (62): funding (or other donations) received from corporations (and third parties acting on behalf of the industry) to individuals and institutions list of fellowships, awards and other prizes funded by/received from corporations (and third parties acting on behalf of the industry) agreements made with corporations (and third parties acting on behalf of the industry) The above strategies could be mandated by law, with substantial fines for those who fail to comply. 	x	X	2/	1	USA - American Academy of Nutrition and Dietetics - Meet our sponsors
Monitoring of influence of commercial interests on public health: annual reports and international comparisons (55,80)		X			See Supplementary File 1 for a list of institutions working on the influence of corporations on public health policy, research and practice, some of which are implementing this mechanism

Conferences and other meetings in public health	 Policy including information about (75,86,87): Individuals and institution responsible for the content, quality, and scientific integrity of activities. This necessitates eliminating commercial bias for or against any product and maintaining control over planning, program design, faculty selection, educational methods, materials, and evaluations whom to accept funding from and how to document agreements made with corporations, based on a risks analysis how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided, if necessary), reported, reviewed, documented, managed, or eliminated, as well sanctions in case of noncompliance with the policy ways to avoid focus on a single product or company (including through branded items, exhibit halls and booths, use of brand or trade names) control of the access to registrants' mailing addresses review of educational materials and whether or not to ban the distribution of promotional materials in educational sessions which party is responsible for general oversight to ensure compliance with policy, as well as sanctions for non-compliance 	X	X	X	X	X	 International Society of Behavioral Nutrition and Physical Activity (ISBNPA) - policy for sponsors of annual meetings World Public Health and Nutrition Association (WPHNA) - World Nutrition Congress 2016 - Conflict of interest and ethics policy
	Public disclosure of (75,87): declarations of conflicts of interest for conference organisers and all participants list of sponsors, nature of sponsorship, as well as agreements made with sponsors list of presentations made by individuals from, or supported by, corporations (and third parties acting on behalf of the industry) list of awards and other prizes from corporations(and third parties acting on behalf of the industry) list of booths	x	1	X	2	2	 Latin America - Sociedad Latinoamericana de Nutrición (SLAN) - Conflict of Interest policy USA - Obesity Week 2018 abstracts (including sources of funding)
	Provision of education to participants on how to evaluate information provided by corporations			X			
	Education and certification programs to be developed for journalists who report upon health, which would emphasise the risks of conflicts of interest (88)			X			
Media	Codes of ethics (88): requiring that journalists disclose financial or in-kind support relevant to each article or commentary piece specifying the relationships that are not acceptable (e.g., journalists reporting on products or services produced by companies in which they hold shares, or companies paying for the travel expenses of journalists' families) opposing industry-sponsored prizes and educational endowments	X	X	X	X		International - Association of Health Care Journalists - Statement of Principles of the Association of Health Care Journalists

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Where countries regulate journalism, the above strategies could be mandated by law, with substantial fines for those who fail to comply Publicly accessible register of relationships between industry (and third parties acting on behalf of the industry) and journalists, editors, media organisations and journalism organisations (including professional and educational bodies) X Χ Where countries regulate journalism, the above strategies could be mandated by law, with substantial fines for those who fail to comply The Centre for Science in the Public Interest (CSPI) used to have a database of more than 4,000 scientist and universities that had ties with the industry (the list is no longer available) (89) Several countries have adopted transparency policies with regard to the interactions between healthcare professionals and pharmaceutical companies (42): Public database of conflicts of interests for individuals and institutions in France - Public database Transparency - Health - Law X Χ Other public health (40,61,83) No. 2011-2012 of 29 December 2011 on the Strengthening of Health Protection for Medicinal and Health Products USA - Centers for Medicare and Medicaid Services -Open Payments, established through the Physician Payments Sunshine Act (PPSA), also known as section 6002 of the Affordable Care Act (ACA) of 2010

¹ These mechanisms are directed at individuals in academia, including students, researchers and other academic professionals, and their institutions, including universities, research organisations, research agencies from governments and academic medical centres

² These mechanisms are directed at individuals, including health and public health professionals, and their institutions, including patient and consumer organisations, health/public health professionals organisations

Discussion

Our searches identified 49 mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice. The primary purposes of the mechanisms identified are to manage conflicts of interest and increase the transparency of public-private interactions. Based on publically available information, we found that 43 of these mechanisms had been adopted, although we could not confirm that they had all been implemented and had been determined to be effective.

There is currently limited research in this area, with only a few peer-reviewed scientific articles published in the literature. We also noted that there is a lack of research from low or middle income countries. We identified limited evidence on mechanisms targeted at the media and civil society, compared to those targeted at governments and academia. We found no information for schools on ways to address and manage the influence of corporations on their institutions, in relation to public health (for example through the provision of health or nutrition education or physical activity programmes). We identified limited information about mechanisms that could address the influence of corporations; most mechanisms seek to manage that influence (through transparency, for example). Managing the influence of corporations is an important first step, but is not sufficient, or could even be counterproductive in some circumstances (44).

To our knowledge, this review is the first attempt to develop an inventory of mechanisms to address and manage the influence of corporations on public health policy, research and practice. Among its strengths is its breadth. Although we limited our searches to mechanisms developed to address and/or manage the influence of the alcohol, food, gambling, oil, pharmaceutical and tobacco industries, many of the mechanisms identified in our review were developed with no restriction on the type of industries targeted. Hence this inventory may help in building efforts to address and/or manage the influence of all types of industries.

The list compiled here is non-exhaustive and by nature, subject to changes, as an increasing number of governments and other institutions take measures to prevent undue influence from industry. It rather was intended to be a first attempt to identify mechanisms that exist across the globe, as well as examples where these mechanisms have been adopted. It thus provides a firm footing for further work in this area.

In this scoping review, we did not assess the quality of the included studies, as we only used them to identify mechanisms. In addition, mechanisms at the sub-national level were not included here and might be the subject of future investigations. Moreover, we excluded work funded by the industry, but it is possible that some authors did not declare their sources of funding in the publications. In this case, their work is included in our analysis, which represents a COI with regards to the issues at stake.

Ideally, corporations should refrain from influencing public health policy, research and practice. Governments, international organisations, academia, the media and civil society should avoid interacting with corporations whose interests risk damaging their independence, integrity and credibility (43). However, in reality, these interactions often are the default approach in public health, probably driven by a strong influence exerted by businesses (43). These interactions, the reasons for them to happen and associated risks for public health were recently discussed in the literature (43). Public institutions sometimes lack resources, particularly financial resources, to address urgent public health issues (43). Academic institutions might want to contribute to the economic development in their country, thus partnering with corporations (43). The current situation is perhaps challenging, but there is scope (and need) for change. Many of the examples we identified in our review related to the implementation of the WHO FCTC, the only global treaty that explicitly addresses the interference of an industry with public health policy. The proposed Framework Convention on Food Systems (FCFS) and Framework Convention on Alcohol Control (FCAC) are therefore potential solutions to address and manage the influence that vested interests could have on public health policy, research and practice. If adopted and evaluated more widely,

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many of the mechanisms described in this manuscript could contribute to efforts to prevent and control non communicable diseases.

More research on each of these mechanisms is needed, including on their effectiveness in addressing and/or managing the influence of corporations on public health policy, research and practice. There is a need to understand if these mechanisms are effective in addressing the influence of all industries, or of only some industries, and then study the political, social and other factors responsible for these differences. Collectively, public health professionals might also develop, in the future, new mechanisms not described in our manuscript. Some countries have already adopted some of the mechanisms proposed in this manuscript; others have done little, including countries facing strong resistance to developing and implementing them. An evaluation of the implementation of these mechanisms, which could include a benchmarking exercise, is therefore needed and will inform governments, universities, and other actors in public health. In addition to these mechanisms, a module on 'corporations and health' could be part of the curriculum for professionals being trained in public health policy, research or practice. Conferences and other meetings of public health professionals should also be used as a platform where to discuss the influence of the industry on public health policy, research and practice. This may be particularly important in the case of academic conferences which involve extensive resources and input from and partnerships with corporations, such as nutrition and gambling conferences.

In conclusion, corporations have significant economic and political power, which may, in some circumstances, be detrimental to public health. We identified several mechanisms that could help address and/or manage that influence. The development, implementation and monitoring of these mechanisms seem crucial to protect public health from the commercial interests of industry actors.

Authors' contributions

MM and GS contributed to the conception of the work, with support from SV and LB. MM led data collection and analysis, with support from SV, AC, LB, FG, MP, MMK, DS and GS. MM led the

writing of the manuscript and all authors have substantively revised it. All authors have approved the submitted version. All authors have agreed both to be personally accountable for the author's own contributions and to ensure that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature.

Competing interests declaration

None.

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Ethics approval

This project did not require an ethics approval.

Data sharing statement

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

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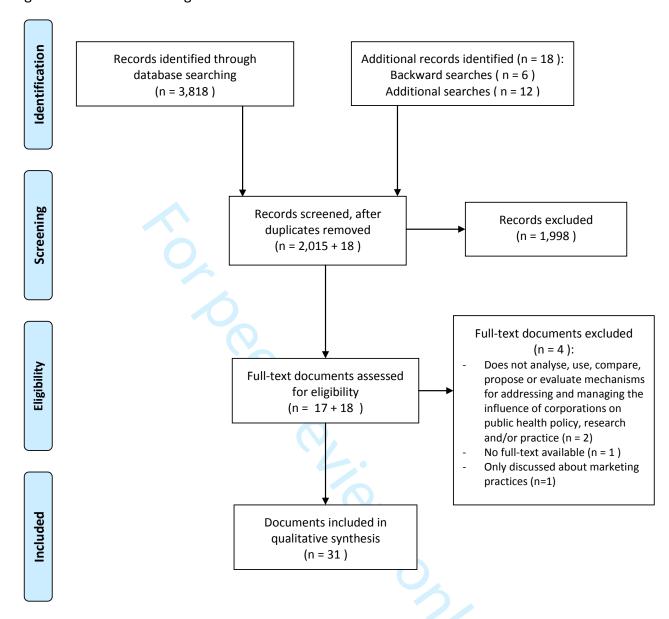
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Figure 1: PRISMA Flow Diagram



- Supplementary File 1: List of institutions working on the influence of corporations on public health policy, research and practice (alphabetical order, as of Jan
- 2 2019, non-exhaustive)

Name of the organisation	Region	Nature of organisation	Mission related to the influence of corporations on public health policy, research and practice	
Alcohol Justice	USA	Civil society organisation	Campaigning against the alcohol industry's harmful practices	
Alliance for Lobbying Transparency and Ethics Regulation (Alter-EU)	Europe	Civil society organisation	Advocating against the influence of corporate lobbyists on the political agenda in Europe	
Anticor – against corruption and for ethics in politics	France	Civil society organisation	Fighting corruption and advocating for ethics in politics	
ATTAC (Association for the Taxation of Financial Transactions and for Citizens' Action)	International	Civil society organisation	Advocating for the taxation of financial transactions	
Center for Media and Democracy (CMD)	USA	Civil society organisation	Investigating corruption	
Centre for Research on Multinational Corporations (SOMO)	International	Civil society organisation	Investigating multinational corporations and the impact of their activities on people and the environment	
Center for Responsive Politics	USA	Civil society organisation	Tracking money in USA politics and its effect on elections and public policy	
Center for Science in the Public Interest (CSPI)	USA	Civil society organisation	To ensure that science and technology are used for the public good and to encourage scientists to engage in public-interest activities	
Corp Watch	USA	Civil society organisation	Providing accurate, timely and easily accessible articles, reports and data on violations by multinational corporations	
Corporate Accountability	International	Civil society organisation	Denouncing certain practices of large corporations in the food, tobacco and other industries	
Corporate Europe Observatory (CEO)	Europe	Civil society organisation	Investigation and reporting on the influence of large corporations and corporate lobby groups in European Union-policy making	

Corporate Research Project	USA	Civil society organisation	Assisting community, environmental and labor organizations in researching companies and industries
Corporations and health	International	Academia	Tracking the effects of corporate practices on health
CounterCorp	USA	Media	Seeking to spotlight, curtail, and ultimately prevent the corrosive economic, political, and social effects of corporate impunity around the world by raising public and media awareness, promoting critical thought and analysis, and encouraging informed discussion and debate about how corporations actually operate, and what they really add to — and subtract from — humanity's "bottom line".
Formindep	France	Civil society organisation	Advocating for an independent medical education and information (e.g., lunches and other medical events free from conflicts of interest, etc.)
Friends of the Earth	International	Civil society organisation	Disseminating information on lobbying and corporate practices
Governance, Ethics, and Conflicts of Interest in Public Health (GECI-PH) Network	International	Academia and civil society	(i) Sharing, collating, promoting and fostering knowledge of industry interference in public health, research, policy, practice and education; (ii) Documenting the governance, ethical, and COI issues that arise in the interaction between public health research, practice, and policy and industry involvement; (iii) Building capacity, setting research priorities, and acting as a forum for collaboration between researchers and civil society actors relevant to GECI; (iv) Strengthening relationships with advocacy organizations at multiple levels of governance; (v) Advocating for research and action to advance aims and objectives of the GECI network; (vi) Fostering policy dialogue, and promote evidence use through knowledge translation, monitoring and evaluation, and evidence tools
International Baby Food Action Network (IBFAN)	International	Civil society organisation	Monitoring the compliance with the International Code of Breast Milk Substitutes, and subsequent relevant World Health Assembly resolutions, as well as highlighting conflict of interests in policies and programmes both globally and nationally

Maison des Lanceurs d'Alerte (House of Whistle-Blowers)	France	Civil society organisation	Protecting and supporting whistle-blowers
Observatoire des multinationals (Multinationals Observatory)	International	Media	Reporting on the impact of multinationals in France on the economy, policy, society and environment
Observatorio de Multinacionales en America Latina (OMAL, Observatory of Multinationals in Latin America)	Latin America	Civil society organisation	Investigating and denunciating of impacts of transnationals corporations
Platform to Protect Whistleblowers in Africa (PPLAAF)	Africa	Civil society organisation	Protecting and supporting whistle-blowers
Southeast Asia Tobacco Control Alliance (SEATCA)	Southeast Asia	Civil society organisation	Support countries in South East Asia in developing and putting in place effective tobacco control policies, providing examples of violations of article 5.3 of the FCTC
SumOfUs	International	Civil society organisation	Holding companies accountable
Transnational Institute (TNI)	International	Civil society organisation	Supporting international efforts to establish binding international obligations of transnational corporations
Tobacco Research Group - University of Bath	UK	Academia	Reporting information on the influence of the tobacco industry on public health policy, research and practice: Tobaccotactics.org - Wiki-type website
Transparency International	International	Civil society organisation	Fighting corruption
U.S. Right to know (URTK)	USA	Civil society organisation	Advocating for truth and transparency in the food system

Note: These institutions were identified from our experience working on corporations influence on public health policy, research and practice

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			OITT NOL "
Title	1	Identify the report as a scoping review.	
ABSTRACT			ı
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	



SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #			
RESULTS						
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.				
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.				
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).				
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.				
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.				
DISCUSSION	•					
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.				
Limitations	20	Discuss the limitations of the scoping review process.				
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.				
FUNDING						
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.				

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med.;169:467–473. doi: 10.7326/M18-0850



^{*} Where sources of evidence (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

[†] A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

[‡] The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

[§] The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

<u>Supplementary File 3</u>: Search strategy for our scoping review, searches were conducted on 4 June 2019

Database: Web of Science Core Collection (WoS interface) (790 results)

TO= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance)) AND TI= ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*))

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=2003-2019

Database: BIOSIS Citation Index (Web of Knowledge interface) (249 results)

TS= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance)) AND TI= ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*))

Indexes=BCI Timespan=2003-2019

Database: MEDLINE (Web of Knowledge interface) (674 results)

(TS= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance)) OR MH= ((Manufacturing Industry OR Industry OR Commerce) AND (Codes of Ethics))) AND (TI=

((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*)) OR MH= ((Food OR Diet, Food, "and" Nutrition OR Obesity OR Alcohol Drinking OR Chemistry, Pharmaceutical OR Gambling OR Tobacco Smoking OR Environment "and" Public Health) AND (Conflict of Interest OR Public-Private Sector Partnerships OR Policy Making OR Lobbying OR Politics)))

Indexes=MEDLINE Timespan=2003-2019

Database: Embase (Embase interface) (589 results)

(corporat*:ti,ab,kw OR industr*:ti,ab,kw OR compan*:ti,ab,kw OR business*:ti,ab,kw OR firm*:ti,ab,kw) AND (address*:ti,ab,kw OR manag*:ti,ab,kw OR 'guid*':ti,ab,kw OR 'codes of conduct':ti,ab,kw OR framework*:ti,ab,kw OR standard*:ti,ab,kw OR governance:ti,ab,kw) AND (diet:ti OR nutrition:ti OR food:ti OR obesity:ti OR alcohol:ti OR drink:ti OR pharma*:ti OR gambl*:ti OR tobacco:ti OR smok*:ti OR cigarette*:ti OR oil:ti OR 'public health':ti) AND (interact*:ti OR conflict*:ti OR 'public*private':ti OR poli*:ti OR legislat*:ti OR lobb*:ti) AND [2003-2019]/py

Database: Scopus (Scopus interface) (1,516 results)

TITLE-ABS-KEY((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or "guid*" or "codes of conduct" or framework* or standard* or governance))

AND TITLE ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gambl* or tobacco or smok* or cigarette* or oil or "public health") AND (interact* or conflict* or "public*private" or poli* or legislat* or lobb*)) AND PUBYEAR AFT 2003

<u>Supplementary File 4:</u> URLs for examples provided in Tables 1 and 2 (alphabetical order, by country/region and institution)

- Africa Platform to Protect Whistleblowers in Africa: https://pplaaf.org/fr/
- Australia:
 - O Australian Government Lobbyists Register: https://lobbyists.pmc.gov.au/
 - O Australian National Health and Medical Research Council (NHMRC):
 - Freedom of Information: https://www.nhmrc.gov.au/about-us/freedom-information
 - Freedom of Information Disclosure Log: https://www.nhmrc.gov.au/about-us/freedom-information/foi-disclosure-log
 - Public submissions Open public consultations:
 http://consultations.nhmrc.gov.au/files/consultations/ written submissions/
 - Australian Public Service Commission Sect 4.12 Gifts and benefits: https://www.apsc.gov.au/sect-412-gifts-and-benefits
 - O Deakin University 'the University must not accept direct or indirect funding from or enter into any partnership or other arrangement with the tobacco industry, an organisation in the tobacco industry or from a foundation that accepts funds from the tobacco industry.': https://policy.deakin.edu.au/view.current.php?id=00099
 - Flinders University School of Health Science Student prizes:
 http://www.flinders.edu.au/sohs/sites/nutrition-and-dietetics/student-prizes.cfm
 - The University of Sydney ban on acceptance of funding from tobacco companies: http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2011/4
 - The University of Sydney, Charles Perkins Centre Engagement with industry guidelines: https://sydney.edu.au/content/dam/corporate/documents/charles-perkins-centre/CPC%20Engagement%20with%20Industry%20Guidelines.pdf
 - The University of Sydney School of Molecular Bioscience Scholarships and Prizes: http://sydney.edu.au/science/molecular bioscience/current students/prizes.php
- Brazil:
 - o Brazilian Health Regulatory Agency (Anvisa):
 - Agenda of senior officials: http://portal.anvisa.gov.br/agenda-de-dirigentes/-/agenda/403
 - Decree on conflict of interest related to working groups: http://portal.anvisa.gov.br/documents/219201/219401/Portaria+n%C2%BA+1.88 6+Anvisa%2C+de+07+de+outubro+de+2016/29237afa-2b7e-456c-9a61-7826a747ded4
 - o Presidency of the Republic:

- Agenda: http://www2.planalto.gov.br/acompanhe-o-planalto/agenda-do-presidente-da-republica/ (agenda available for other government officials)
- Code of Conduct for Senior Federal Administration 2014:
 http://etica.planalto.gov.br/sobre-a-cep/legislacao/codigo-conduta-compilado-2014.pdf
- o Supreme Court portal: http://portal.stf.jus.br/
- Superior Electoral Court:
 - 'Disclosure of Election Candidatures and Accounts':

 http://www.tse.jus.br/eleicoes/eleicoes-2018/prestacao-de-contas-1
 - 'Accountability of candidates and political parties':
 http://divulgacandcontas.tse.jus.br/divulga/
- Tobacco Control Inter-Ministerial Commission: https://www.inca.gov.br/observatorio-da-politica-nacional-de-controle-do-tabaco/comissao-nacional-para-implementacao-convencao-quadro-para-o-controle-tabaco-e-seus-protocolos
- Transparency portal:
 https://esic.cgu.gov.br/sistema/Relatorios/Anual/DownloadDados.aspx and
 https://esic.cgu.gov.br/sistema/Relatorios/Anual/DownloadDados.aspx and
 https://www.consultaesic.cgu.gov.br/busca/_layouts/15/DownloadPedidos/DownloadDados.aspx
 https://www.consultaesic.cgu.gov.br/busca/_layouts/15/DownloadPedidos/DownloadDados.aspx
- Canada:
 - Alberta Securities Commission System for Electronic Document Analysis and Retrieval (SEDAR): http://www.sedar.com/
 - Canadian Medical Association Policy on physicians' interactions with industry was formally adopted by 22 out of 60 Canadian medical associations (2017): https://content.iospress.com/articles/international-journal-of-risk-and-safety-in-medicine/jrs731
 - Government of Canada:
 - Meetings and correspondence on healthy eating:
 https://www.canada.ca/en/services/health/campaigns/vision-healthy-canada/healthy-eating/meetings-correspondence.html
 - Justice Laws website Criminal Code: https://laws-lois.justice.gc.ca/eng/acts/C-46/page-87.html#docCont
 - Office of the Conflict of Interest and Ethics Commissioner Registry of gifts: http://ciec-ccie.parl.gc.ca/EN/PublicRegistries/Pages/Gifts.aspx
- Chile:
 - Electoral Service Donations: https://www.servel.cl/donaciones/
 - Ministry General Secretariat of the Presidency:
 - Platform Lobby Law:

- Code of good practices for lobbyists:
 https://www.leylobby.gob.cl/files/buenas_practicas_lobby.pdf
- Registry of lobbyists: https://www.leylobby.gob.cl/lobbistas
- Law n°20285 on access to public information: https://www.leychile.cl/Navegar?idNorma=276363
- o Supreme Court portal: https://oficinajudicialvirtual.pjud.cl/frameInv.php
- Transparency portal:

 https://www.portaltransparencia.cl/PortalPdT/web/guest/opendata#_48_INSTANCE_GI6

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• Colombia:

- Congress of Colombia Law 190 of 1995, article 15 Regime of civil servants:
 http://wp.presidencia.gov.co/sitios/normativa/leyes/Documents/Juridica/Ley%20190%20de%20190%20de%201905.pdf
- Presidency of the Republic of Colombia Law 1712 of 1994 on transparency and right to access to national public information: http://www.anticorrupcion.gov.co/SiteAssets/Paginas/Publicaciones/ley-1712.pdf
- Djibouti Law n°175/AN/07/5L Concerning Organization for the Protection of Health against the Tobacco Habit: https://www.tobaccocontrollaws.org/files/live/Djibouti/Djibouti/20-% 20Law% 20No.% 20175_AN_07% 20% 20-% 20national.pdf
- European Union:
 - o European Commission:
 - Consultations Public Health:
 http://ec.europa.eu/health/consultations/index_en.htm
 - Public access to documents: https://ec.europa.eu/info/about-european-commission/service-standards-and-principles/transparency/freedom-information/access-documents/how-access-commission-documents_en#make-a-document-request
 - European Food Safety Authority Declarations of interests Panel on nutrition: https://ess.efsa.europa.eu/doi/doiweb/doisearch/panel/NUTRI/wg/0
 - European Parliament:
 - Committees Draft agendas: http://www.europarl.europa.eu/committees/en/draft-agendas.html
 - Declarations of interests Members of the European Parliament:
 http://www.europarl.europa.eu/meps/en/full-list.html;jsessionid=E560EDFEFF30C5A1388A59D4CED052FB.node2
 - Register of gifts 8th parliamentary term:
 http://www.europarl.europa.eu/pdf/meps/gifts-register_8.pdf

Guidelines on the prevention and management of COI in EU decentralised agencies:
 https://europa.eu/european-union/sites/europaeu/files/docs/body/2013-12-10_guidelines_on_conflict_of_interests_en.pdf

• France:

- National Assembly Financing of political life: parties and electoral campaigns:
 http://www2.assemblee-nationale.fr/decouvrir-l-assemblee/role-et-pouvoirs-de-l-assemblee-nationale/le-depute/le-financement-de-la-vie-politique-partis-et-campagnes-electorales
- Education Code, L952-2:
 https://www.legifrance.gouv.fr/affichCodeArticle.do?idArticle=LEGIARTI00000652561
 7&cidTexte=LEGITEXT000006071191&dateTexte=20000622
- High Authority for Transparency in Public Life:
 - https://www.hatvp.fr/consulter-les-declarations/#comprendre
 - Register of lobbyists: https://www.hatvp.fr/le-repertoire/
- o Maison des lanceurs d'alerte (House of whistle-blowers): https://mlalerte.org/
- Penal Code Article 432-12 (individual conflicts of interest):
 https://www.legifrance.gouv.fr/affichCodeArticle.do?cidTexte=LEGITEXT00000607071
 9&idArticle=LEGIARTI000006418521&dateTexte=&categorieLien=cid
- Public database Transparency Health Law No. 2011-2012 of 29 December 2011 on the Strengthening of Health Protection for Medicinal and Health Products:
 https://www.transparence.sante.gouv.fr/flow/main;jsessionid=0E92D3EA675A

 DC35CA00343C3E7D0763?execution=e1s1
- Germany Institute for Therapy Research Munich (Institut für Therapieforschung München) Policy on Competing Interests: https://www.ift.de/institut/konkurrierende-interessen/
- India Right to Information Act, 2005: https://rti.gov.in/
- International Annals of International Medicine Editorial 'Exorcising Ghosts and Unwelcome Guests': https://annals.org/aim/article-abstract/718788/exorcising-ghosts-unwelcome-guests
- International Association of Health Care Journalists Statement of Principles of the Association of Health Care Journalists: https://healthjournalism.org/secondarypage-details.php?id=56
- International the BMJ:
 - The BMJ and sister journals no longer carry advertisements for breastmilk substitutes: https://www.bmj.com/content/364/bmj.11200
 - O Staff declarations: https://www.bmj.com/about-bmj/editorial-staff

- International Cochrane policy on commercial sponsorship of Cochrane Reviews and Cochrane Group: https://community.cochrane.org/organizational-info/resources/policies/commercial-sponsorship-policy
- International Committee of Medical Journal Editors (ICMJE) Conflict of Interest form: http://www.icmje.org/conflicts-of-interest/
- International Journal of Human Lactation does no publish research funded by companies that are not compliant with WHO Code on the Marketing of Breast-Milk Substitutes:
 https://journals.sagepub.com/pb-assets/cmscontent/JHL/2019%20JHL%20Author%20Directions%20-%20revised%206.17.2019.pdf
- International Network on Brief Interventions for Alcohol & Other Drugs (INEBRIA) Position
 Statement on the alcohol industry: http://inebria.net/wp-content/uploads/2016/02/position statement on the alcohol industry.pdf
- International Neurology Journals Authorship and Disclosures: https://www.neurology.org/authorship-and-disclosures
- International Public Health Nutrition PHN Editors conflict of interest statements:
 https://www.cambridge.org/core/journals/public-health-nutrition/information/phn-editors-conflict-of-interest-statements
- International Society of Addiction Journal Editors declarations of conflicts of interest for contributors and editors: http://www.addictionjournal.org/pages/ethical-policy
- International Society of Behavioral Nutrition and Physical Activity (ISBNPA) Partnership,
 sponsorship and donation policy: https://www.isbnpa.org/index.php?r=about/partnership
- International Tobacco control, BMJ, Heart, Thorax, BMJ Open, PLoS Medicine, PLoS One, PLoS Biology, Journal of Health Psychology, journals published by the American Thoracic Society - no research funded by the tobacco industry: see individual websites for each journal
- International World Medical Association Declaration of Helsinki Ethical Principles for Medical Research Involving Human Subjects - Ethics Committees - 'This committee must be transparent in its functioning, must be independent of the researcher, the sponsor and any other undue influence and must be duly qualified': https://jamanetwork.com/journals/jama/fullarticle/1760318
- Ireland Department of Health Freedom of Information Request Log: https://health.gov.ie/about-us/freedom-of-information/foi-request-log/
- Latin America Sociedad Latinoamericana de Nutrición (SLAN) Conflict of Interest policy: https://www.slaninternacional.org/conflicto-interes/postura_cdi_slan.php
- Mexico:
 - Chamber of Deputies of the High Congress of the Union General Secretary Secretariat of Parliamentary Services:

- Federal Law for administrative responsibilities of public servants, Article 8, XV: http://www.diputados.gob.mx/LevesBiblio/abro/lfrasp/LFRASP abro.pdf
- Federal Law of transparency and access to public information:
 http://www.diputados.gob.mx/LeyesBiblio/pdf/LFTAIP 270117.pdf
- Law of Administrative responsibilities of civil servants (individual conflicts of interest):
 - http://www.diputados.gob.mx/LeyesBiblio/abro/lfrasp/LFRASP_abro.pdf
- Regulation of the Scientific Council for the Health Risks Regulatory Agency:
 http://www.diputados.gob.mx/LeyesBiblio/regla/n326.pdf
- Ministry of Health Ethics and Prevention of Conflicts of Interest Committee:
 https://www.gob.mx/cms/uploads/attachment/file/119088/Bases_Integraci_n_CEPCI.com
 pressed.pdf
- Mongolia Tobacco Control Act, 2005 (revised 2012):
 https://www.who.int/fctc/implementation/news/Tobacco Control Law Eng revised 4 January FInal.pdf?ua=1
- Nepal Tobacco Product Control and Regulatory Directive 2014:
 https://www.tobaccocontrollaws.org/files/live/Nepal/Nepal/20-%20TP%20Regs%202014.pdf
- New Zealand Education Act 1989 No 80, Public Act 161 Academic freedom: http://www.legislation.govt.nz/act/public/1989/0080/latest/DLM183665.html
- Panama Ministry of Health Resolution No. 745 on the National Commission for the Study of Tobacco: https://www.tobaccocontrollaws.org/files/live/Panama/Panama%20-%20Res.%20No.%20745%20-%20national.pdf
- Philippines:
 - Civil Service Commission Department of Health Joint Memorandum Circular no.
 2010–01 on Protection of the Bureaucracy against Tobacco Industry Interference:
 https://untobaccocontrol.org/impldb/wp-content/uploads/reports/philippines-2016 annex8 protection of burocracy against tobacco_industry_interference_2010.pdf
 - O Department of Health Memorandum No. 2010–0126 on Protection of the Department of Health, including all of its Agencies, Regional Offices, Bureaus or Specialized/Attached Offices/Units, against Tobacco Industry Interference: http://www.healthjustice.ph/wp-content/uploads/2014/09/DOH-Memo-on-Art-5.3-DM-2010-0126.pdf
- Russian Federation Federal Law N 15-FZ of February 23, 2013 On Protecting the Health of
 Citizens from the Effects of Second Hand Tobacco Smoke and the Consequences of Tobacco
 Consumption: http://www.ilo.org/dyn/natlex/docs/ELECTRONIC/96223/117041/F-1510580117/law%20No.15-FZ.pdf

- South Africa South African Government Promotion of Access to Information Act 2 of 2000: https://www.gov.za/documents/promotion-access-information-act
- Uganda Ministry of Health Tobacco Control Act (2015):
 https://health.go.ug/download/file/fid/1110
- United Kingdom (UK):
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 http://www.eatrightpro.org/resources/about-us/advertising-and-sponsorship/meet-our-sponsors
 - Centers for Medicare and Medicaid Services Open Payments, established through the Physician Payments Sunshine Act (PPSA), also known as section 6002 of the Affordable Care Act (ACA) of 2010: https://www.cms.gov/openpayments/
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